

ELECTRONICS SERVICE MANUAL

A-04 Amplifier

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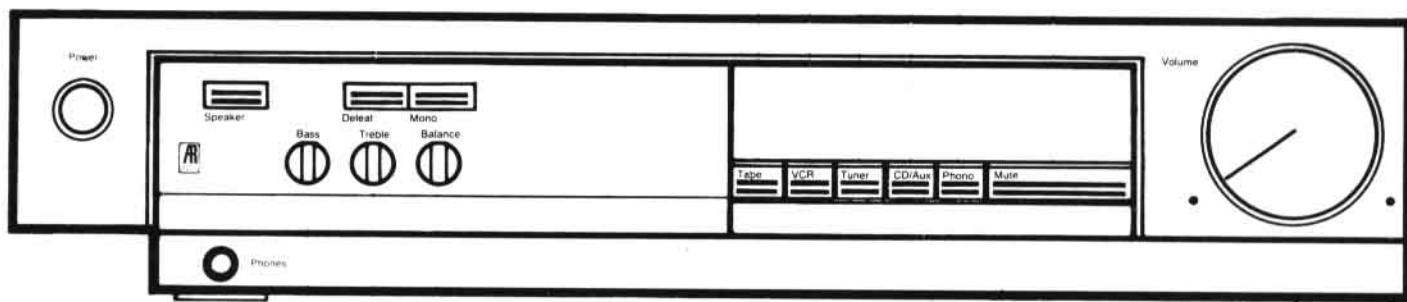
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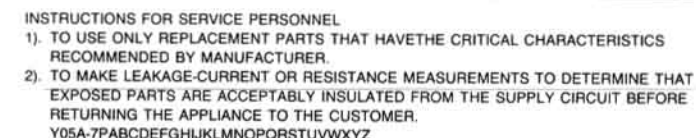
Bias Adjustment

Instruments: DC milli-voltmeter

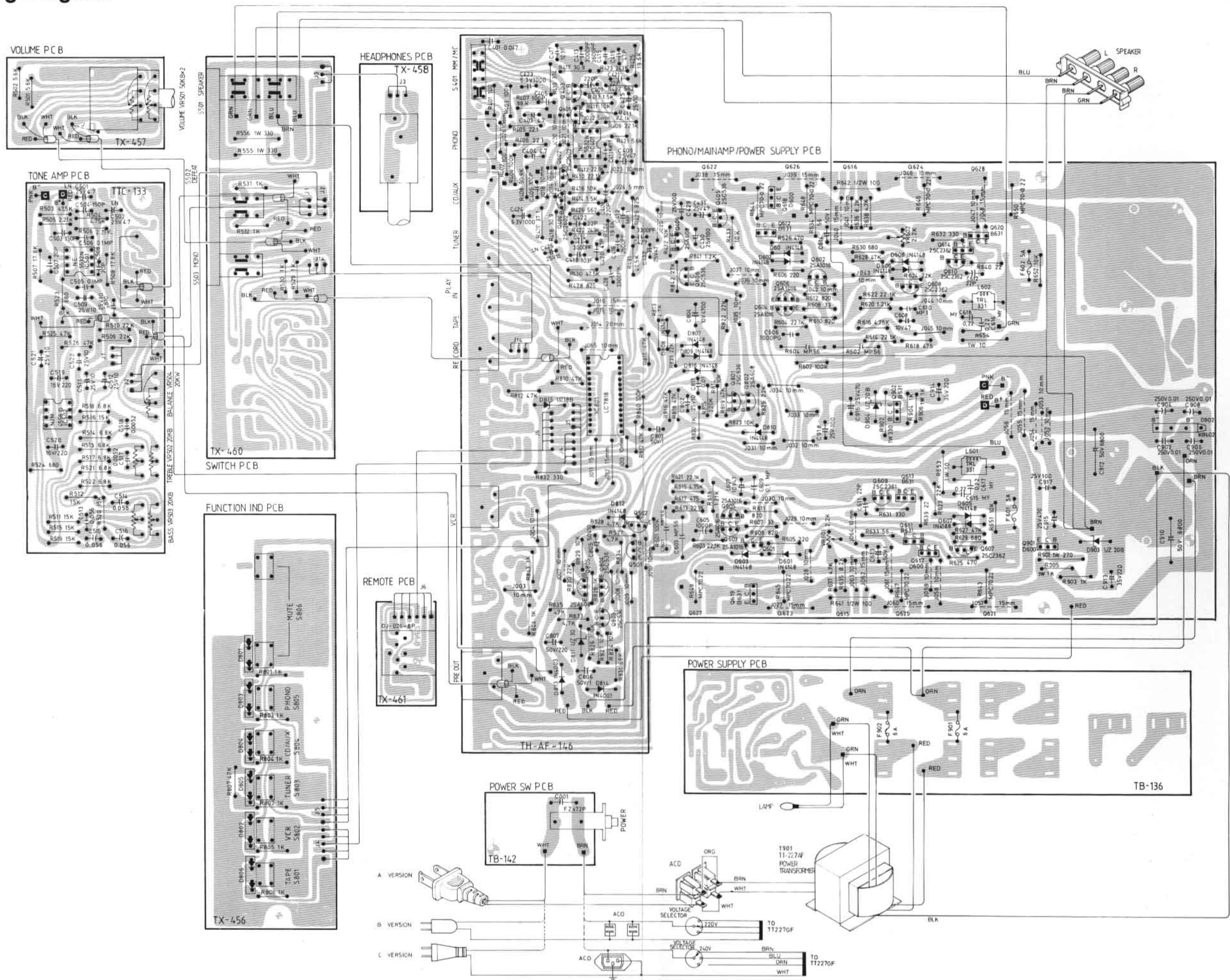
Notes: Prior to Bias Adjustment, run about 5 minutes with rated output (8 ohm) and warm up Power Transistor and Heat Sink.
Set Volume Control to Minimum.

Step	Coupling		Adjust	Adjust for
	Plus Lead	Minus Lead		
1	TP3	TP1	VR601	DC milli-voltmeter reads 3.0mV
2	TP2	TP4	VR602	

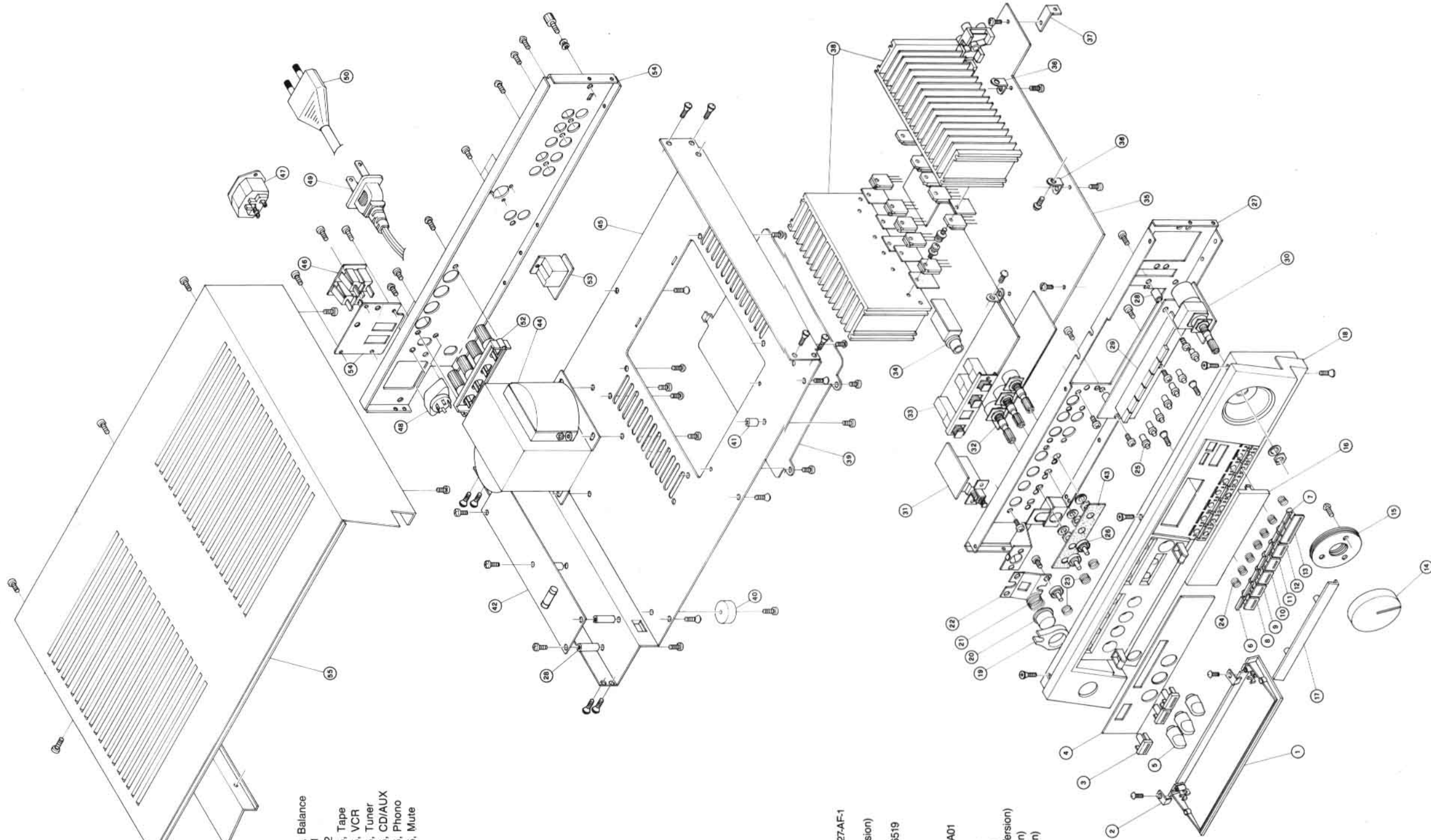
NOTE: PARTS AND CIRCUIT SUBJECT TO CHANGES FOR IMPROVEMENTS WITHOUT PRIOR NOTICE



Wiring Diagram



Disassembly Diagram



Key No.	parts No.	Description
1.	CM00002054	Plastic Door
2.	SP-10004822	Door Lock Plat
3.	KB200001664	Push Button 8x20
4.	OM00002157	Door Plate
5.	KB100001333	Knob, 13 a, Bass Treble, Balance
6.	OM00002080	LED Diffuser, 4TUQ-12#1
7.	OM00002327	LED Diffuser, 4TUQ-12#2
8.	KB200001755	Tact Button (A), 10 x 15, Tape
9.	KB200001767	Tact Button (A), 10 x 15, VCR
10.	KB200001779	Tact Button (A), 10 x 15, Tuner
11.	KB200001780	Tact Button (A), 10 x 15, CD/AUX
12.	KB200001792	Tact Button (A), 10 x 15, Phono
13.	KB200001573	Tact Button (B), 10 x 45, Mute
14.	KB100001357	Knob, 50a, Volume
15.	SR000000780	Knob Spacer
16.	OM00002108	Sub Front Panel A
17.	OM00002110	Sub Front Panel B
18.	AA800000821	Front Panel
19.	BU000000724	Button Ring 17a
20.	KB200001652	Push Button 16.9a
21.	SN000000180	Button Ring 13.2x20
22.	SP-10004901	Push Button Support
23.	SN000000179	Button Spring
24.	SN000000192	Button Spring
25.	OM00002091	Push Button Connector
26.	OM00001943	Button Copnector
27.	AF800000299	Front Chassis
28.	BC000000337	Cylinder Bush 6x14.5
29.		PC.B. Ass'y, TX-456
30.		PC.B. Ass'y, TX-457
31.		PC.B. Ass'y, TB-142
32.		PC.B. Ass'y, TTC-133
33.		PC.B. Ass'y, TX-460
34.		PC.B. Ass'y, TX-458
35.		PC.B. Ass'y, TH-AF-146
36.	SP10003258	PC.B. Support
37.	SP10003040	PC.B. Support
38.	AH200000370	Heat Sink Board
39.	AB000000158	Bottom Cover
40.	FT000000140	Rubber Foot
41.	BC000000258	Cylinder Bush 9.5mm
42.		PC.B. Ass'y, TB-136
43.	FE000000407	Felt
44.	PT21004044	Power Transformer, TT-227-AF-1 (for A Version)
45.	PT21004093	TT-227-GF-1 (for B/C Version)
46.	AM000001318	Chassis Body
47.	SA000001450	AC Outlet Socket, S-I 6519 (for A/B Version)
48.	SA000001553	AC Outlet Socket (for C Version)
49.	VC000000048	Voltage Selector C-4304A01 (for B/C Version only)
50.	CD000000218	AC Cord (for A Version)
51.	CD000000097	AC Cord (for B Version)
52.	CD000000048	AC Power Cord (for C Version)
53.	SP100050548	ACO Mask (for B Version)
54.	SP100047555	ACO Mask (for A Version)
55.	TP200000249	4P Speaker Terminal
	AF800000582	PC.B. Ass'y, TX-461
	AU000000683	Printed Rear Chassis
		Upper Cover

Repair Parts List

Schematic Location	Parts No.	Description
TRANSISTORS, DIODES AND IC'S		
Q401 ~ 404	TR30000467	2SC2602(G), Phono Amp.
Q405	TR30000327	2SC536(G), Phono Stabilizer.
Q406	TR10000126	2SA608K, Phono Stabilizer
Q501, 502	TR30000327	2SC536(G), Tone Muting.
Q601 ~ 606	TR10000023	2SA1016(G,H), Constant Current/Differential Amp.
Q607 ~ 610	TR30000212	2SC2362(G,H), Muting/Pre-Driver.
Q611 ~ 614	TR10000047	2SB631K(E,F), Constant Current/Pre-Driver.
Q617 ~ 618	TR40000069	2SD600K(E,F), Driver
Q619, 620	TR10000047	2SB631K(E,F), Driver
Q621, 622	TR40000045	2SD1047(E,F), Power Amp.
Q623, 624	TR20000040	2SB817(D,E), Power Amp.
Q625, 626	TR40000045	2SD1047(E,F), Power Amp.
Q627, 628	TR20000040	2SB817(D,E), Power Amp.
Q801	TR30000327	2SC536(G), Protector
Q802	TR10000126	2SA608K, Protector
Q803, 804	TR30000327	2SC536(G), Protector
Q805	TR10000126	2SA608K, Protector
Q806	TR30000327	2SC536(G), Stabilizer
Q901	TR40000069	2SD600K(E,F), Stabilizer
Q902	TR10000047	2SB631K(E,F), Stabilizer
D601 ~ 608	DD10000100	IN4148, Bias Compensator
D801 ~ 806	DD40000812	SE65224DT-D, LED
Q807 ~ 810	DD10000100	IN4148, Diode
D811	DD20000030	UZ30, Zener Regulator
D812	DD10000100	IN4148, Diode se Prevention
D813, 814	DD10000068	IN4003, Diode
D815	DD20000041	UZ18B, Zener Regulator
D816	DD10000100	IN4148, Diode
D901,	DD10000020	KBL-02/PBL-403, Rectifier
D903, 904	DD20000028	UZ20B, Zener Regulator
IC401	IC00001279	NE5532N, Phono Amp.
IC501	IC00001279	NE5532N, Tone Amp.
IC502	IC00001474	NJM4556D, Tone Amp.
IC801	IC00001541	LC7818, Function

Schematic Location	Parts No.	Description
COILS, VARIABLE RESISTORS, SWITCHES AND OTHERS		
L601, 602	LC23310002	TRL-331, Anti-Parasitic Coil
VR501	RV10001073	051 C-4170A08, 50KB x 2, Volume Control
VR502, 503	RV10000433	4TR-1742, 20KB x 2, Treble, Bass Control
VR504	RV10000378	4TR-1572, 20KW, Balance Control
VR601, 602	RV40000022	VM6CKPV-1S-B 2.2KB, Bias Adj.
S501 ~ 503	SH14000160	4TR-2279, 4 Key Push Switch, Speaker/Defeat/Mono
S801 ~ 808	SH60000239	4TR-2301, Key Board Switch, Tape/VCR/Tuner/CD/Phono/Mute
	SH40000155	C-4176A01, Power
S401	SH20000319	SSY342, Slide Switch Phono
T001	PT21004044	TT-227-AF-1, Power Transformer (for A Version)
	PT21004093	TT-227-GF-1 Power Transformer (for B, C Version)
F601,602	FU12000106	Fuse, 250V 5A (UL)
	FU23000074	Fuse, 250V 5A (Mini)
F901,902	FU12000136	Fuse, 250V 6A (UL)
	FU23000086	Fuse 250V 6.3A (Mini)

Specifications

Continuous Power Output	40 watts* per channel, min RMS both channels driven into 8 ohms from 20 to 20,000 Hz with no more than 0.03% total harmonic distortion
DIN Power Output	58 watts per channel (1kHz, 4 ohms, 1% THD)(D)
Music Power	200 watts total (100 w/ch)
Continuous Rated Power Output	total harmonic distortion (20 to 20,000 Hz) no more than 0.03% inter modulation distortion (60Hz:7kHz = 4:1) no more than 0.03%
Continuous 1/2 Rated Power Output	total harmonic distortion (20 to 20,000 Hz) no more than 0.02% inter modulation distortion (60Hz:7kHz = 4:1)
1 Watt/ch Power Output, 8 ohms	total harmonic distortion (20 to 20,000 Hz) no more than 0.03% inter modulation distortion (60Hz:7kHz = 4:1) no more than 0.03%
Output	
Speaker	8 ohm nominal
Headphone	8 ohm nominal
Damping Factor	120 (1 kHz, 8 ohms)
Input Sensitivity/Impedance	
Phono (MM)	2.5mV/47 Kohms
Phono (MC)	200 μ V/100 ohms
CD	150mV/20 Kohms
Tuner, Tape Monitor	150mV/20 Kohms
Overload Level (THD 0.5% 1 kHz)	
Phono (MM)	180mV
Phono (MC)	15mV
CD, Tuner, Tape Monitor	5V
Frequency Response	
Phono	20 to 20,000Hz $\pm$ 0.2dB (RIAA STD)
CD, Tuner, Tape Monitor	20 to 20,000Hz + 0.5dB -0.3dB
Signal to Noise Ratio (IHF A Network)	
Phono (MM)	80 dB
Phono (MC)	70 dB
CD, Tuner, Tape Monitor	90 dB
Power Consumption	200 watts
Dimensions (Overall)	430(W) $\times$ 88(H) $\times$ 356(D) 16 $\frac{1}{4}$ " $\times$ 3 $\frac{1}{2}$ " $\times$ 14 $\frac{1}{4}$ "
Weight (net)	7.6 kgs/16.72 lbs

- Specifications and design subject to possible modification without notice.
- *Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Claims for Amplifiers (applicable to the U.S.A. only).