

ELECTRONICS SERVICE MANUAL

A-06 Amplifier

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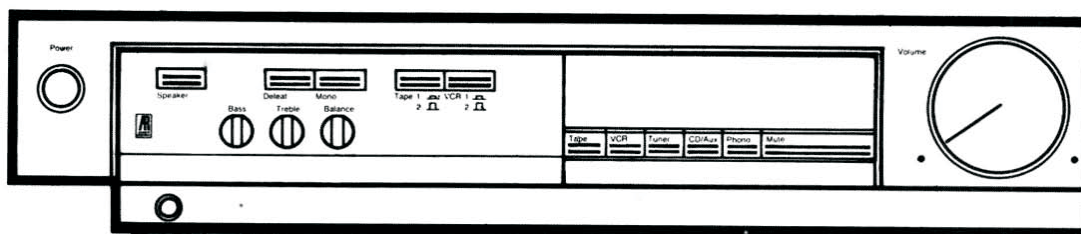
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Bias Adjustment

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	

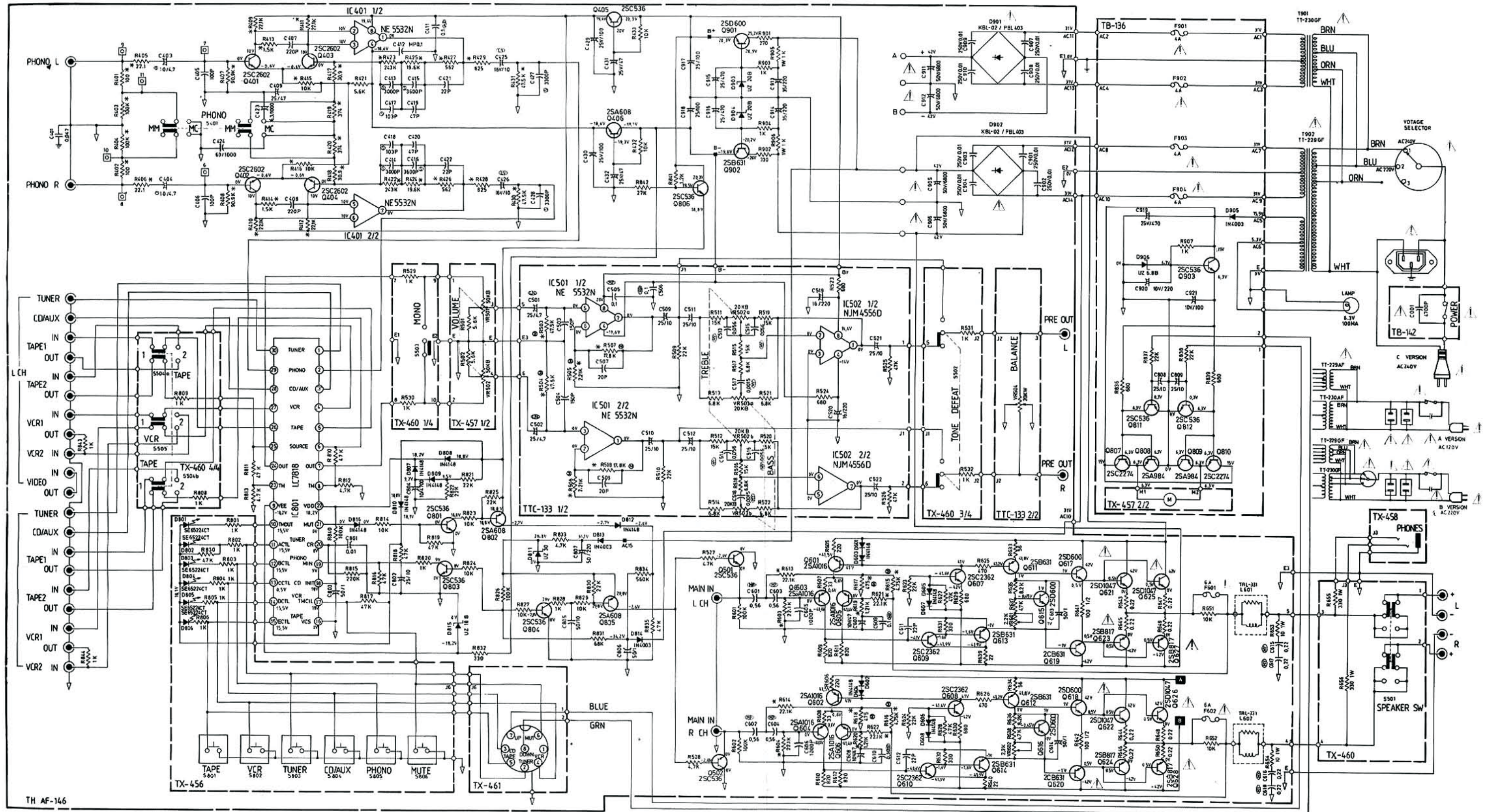
Specifications

Continuous Power Output	60 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	100 watts per channel (1 kHz, 4 ohms, 1% THD)
Music Power	300 watts total (150 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 $\pm$ 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	300 watts
Dimensions (Overall)	430(W) $\times$ 88(H) $\times$ 356(D) 16 $\frac{1}{16}$ " $\times$ 3 $\frac{1}{2}$ " $\times$ 14 $\frac{1}{16}$ "
Weight (net)	9.8 kgs/21.56 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).

Schematic Diagram

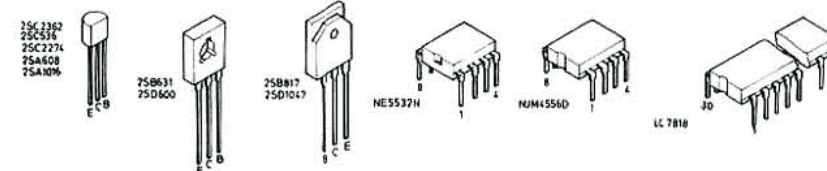
PARTS AND CIRCUIT SUBJECT TO CHANGES FOR IMPROVEMENTS WITHOUT PRIOR NOTICE



RESISTORS
 B%---TOLERANCE UNLESS OTHERWISE NOTED
 K ---KILO OHM
 M ---MEGA OHM
 R ---METAL RESISTORS 1/4 WATTS
 F ---FILM RESISTORS
 C ---LOW NOISE TYPE CARBON RESISTORS

CAPACITORS
 (N) --- LOW NOISE ELECTROLYTIC CAPACITORS
 (M) --- MYLAR FILM CAPACITORS
 (S) --- POLYSTYRENE FILM CAPACITORS
 (T) --- TANTALUM CAPACITORS
 (E) --- ELECTROLYTIC CAPACITORS
 NON MARK CERAMIC CAPACITORS
 UNLESS OTHERWISE NOTED IN SCHEMATIC ALL
 CAPACITANCE VALUES ARE EXPRESSED

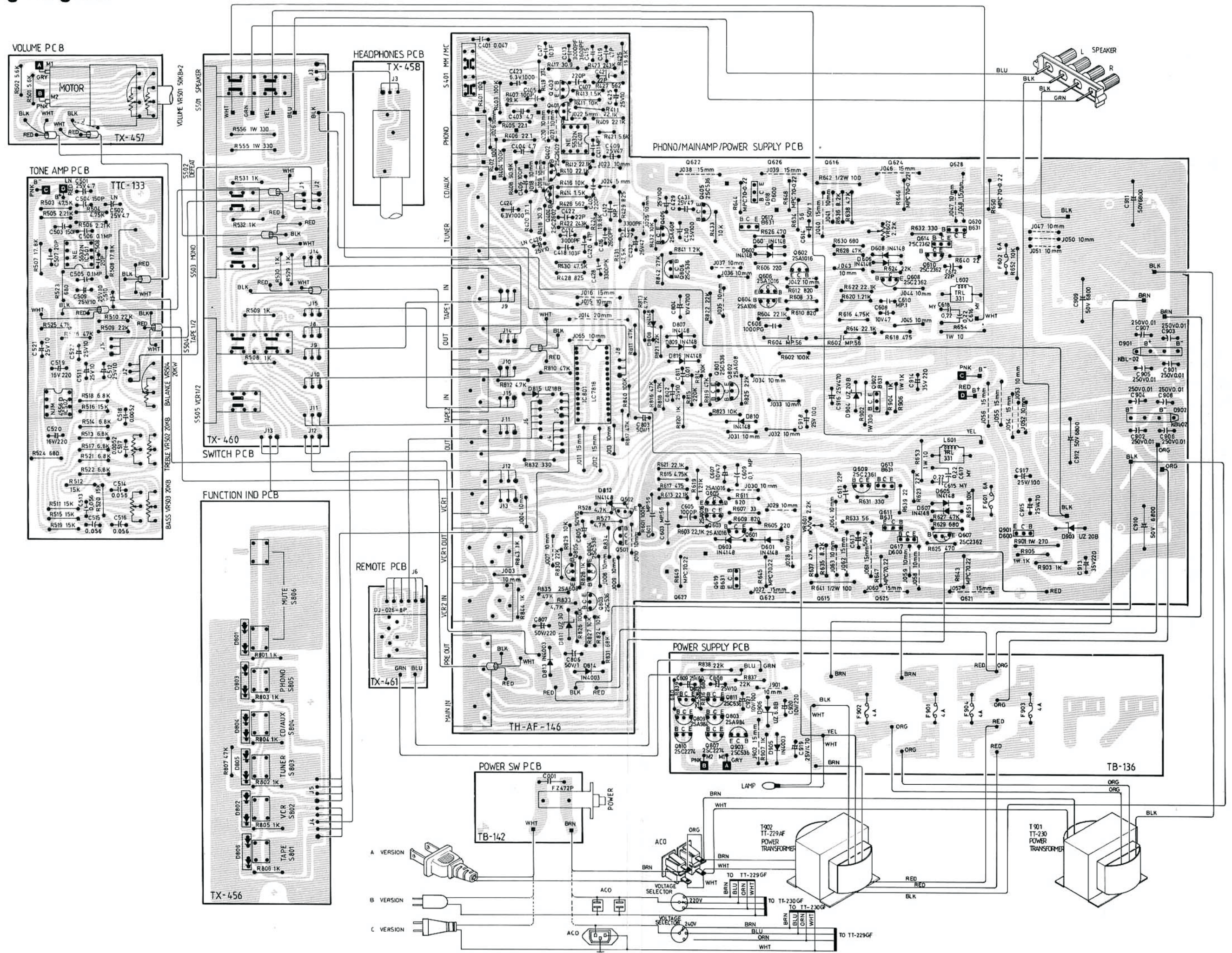
ITEM	SCHEMATIC LOCATION (LAST)	
PHONO AMP	R432	C432
TONE AMP	R532	C532
MAIN AMP	R556	C618
PROTECTOR	R842	C809
POWER SUPPLY	R907	C921



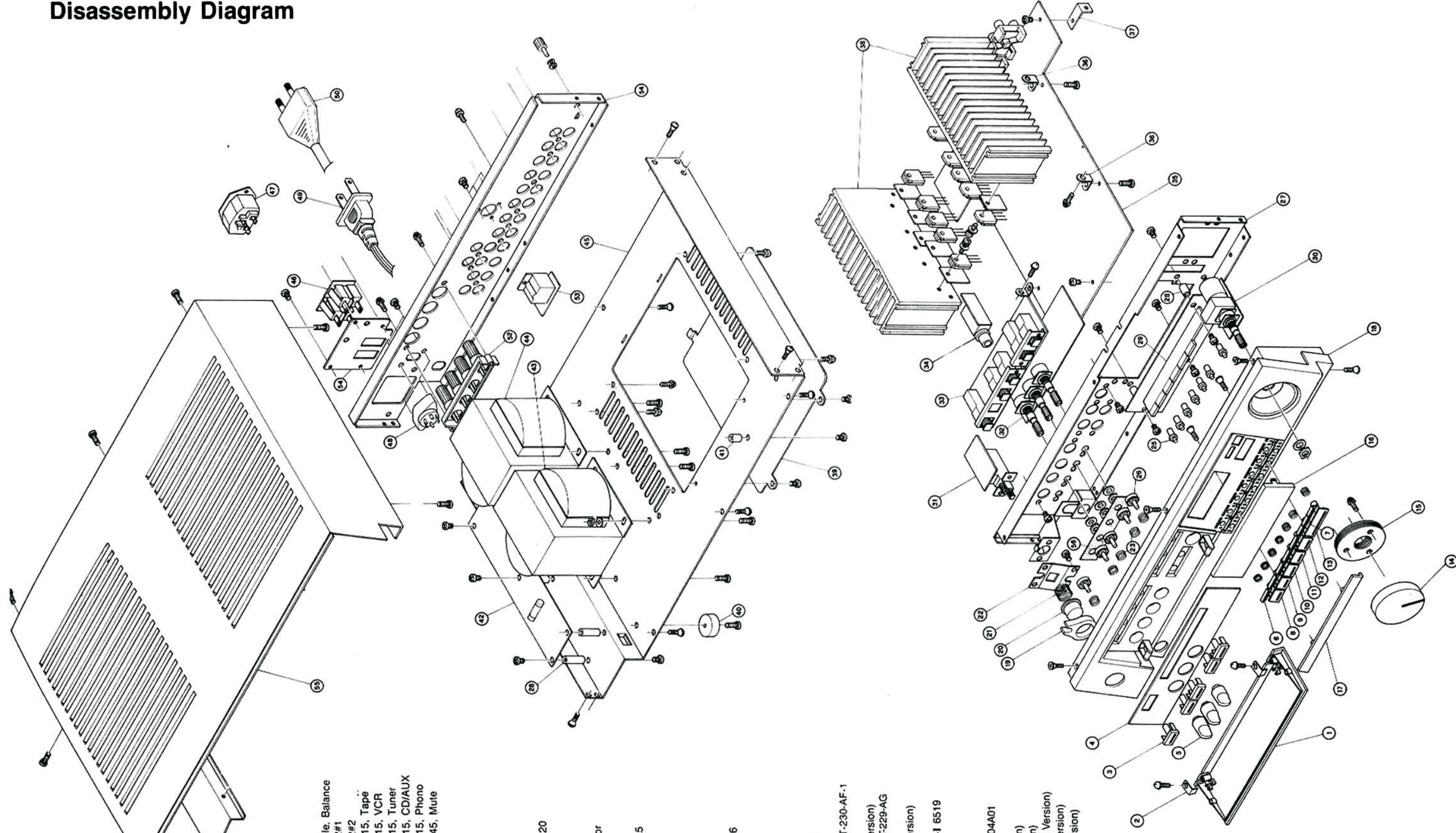
INSTRUCTIONS FOR SERVICE PERSONNEL

- 1) TO USE ONLY REPLACEMENT PARTS THAT HAVE THE CRITICAL CHARACTERISTICS RECOMMENDED BY MANUFACTURER.
- 2) TO MAKE LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.
- Y05A-7PABCD EFGHIJ KLMNOPSTUVWXYZ

Wiring Diagram



Disassembly Diagram



Key No.	pats No.	Description
1.	CM00002054	Plastic Door
2.	SP-10004822	Door Lock Plat
3.	KB20001664	Push Button 8x20
4.	OM00002169	Door Plate
5.	KB10001333	Knob, 13 e, Bass Treble, Balance
6.	OM00002080	LED Diffusor, 4TUQ-12#1
7.	OM00002327	LED Diffusor, 4TUQ-12#2
8.	KB20001755	Tact Button (A), 10 x 15, Tapé
9.	KB20001767	Tact Button (A), 10 x 15, VCR
10.	KB20001779	Tact Button (A), 10 x 15, Tuner
11.	KB20001792	Tact Button (A), 10 x 15, CD/AUX
12.	KB20001573	Tact Button (A), 10 x 15, Phono
13.	KB20001573	Tact Button (B), 10 x 45, Mute
14.	KB10001357	Knob, 50e, Volume
15.	SR00000780	Knob Spacer
16.	OM00002108	Sub Front Panel A
17.	OM00002110	Sub Front Panel B
18.	AA80000821	Front Panel
19.	BU00000724	Button Ring 17e
20.	KB20001652	Push Button 16.9e
21.	SN00000180	Button Spring 13.2e x 20
22.	SP10004901	Push Button Support
23.	SN00000192	Button Spring
24.	OM00002091	Push Button Connector
25.	OM00001943	Push Button Connector
26.	AF80000299	Front Chassis
27.	BC000000337	Cylinder Bush 6e x 14.5
28.		PC.B. Ass'y, TX-456
29.		PC.B. Ass'y, TX-457
30.		PC.B. Ass'y, TB-142
31.		PC.B. Ass'y, TTC-133
32.		PC.B. Ass'y, TX-460
33.		PC.B. Ass'y, TX-458
34.		PC.B. Ass'y, TH-AF-146
35.		PC.B. Support
36.	SP10003258	PC.B. Support
37.	SP10003040	Heat Sink Board
38.	AH20000382	Bottom Cover
39.	AB00000158	Rubber Foot
40.	FT00000140	Cylinder Bush 9.5mm
41.	BC00000258	PC.B. Ass'y, TB-136
42.		Power Transformer, TT-230-AF-1
43.	PT21006340	(for A Version)
44.	PT21006491	TT-230-GF (for B/C Version)
	PT21006144	Power Transformer, TT-229-AG
		(for A Version)
		TT-229-GF (for B/C Version)
		Chassis Body
45.	PT21006296	AC Outlet Socket, S-I 6519
46.	AM00001318	(for A/B Version)
	SA00001450	AC Outlet Socket
47.	SA00001553	(for C Version)
48.	VC000000048	Voltage Selector C-4304A01
		(for B/C Version only)
49.	VC00000218	AC Cord (for A Version)
50.	CD000000097	AC Cord (for B Version)
51.	CD000000048	AC Power Cord (for C Version)
	SP100050048	ACO Mask (for B Version)
	SP10004755	ACO Mask (for A Version)
52.	TP20000249	4P Speaker Terminal
53.		PC.B. Ass'y, TX-461
54.	AR80000594	Printed Rear Chassis
55.	AU00000683	Upper Cover
56.	FE00000407	Felt

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
Q807	TR30000121	2SC2274(E,F), Motor Driver
Q808, 809	TR10000140	2SA984K(E,F), Motor Driver
Q810	TR30000121	2SC2274(E,F), Motor Driver
Q811, 812	TR30000327	2SC536(G), Motor Driver
Q901	TR40000069	2SD600K(E,F), Stabilizer
Q902	TR10000047	2SB631K(E,F), Stabilizer
Q903	TR30000327	2SC536(G), 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
D813, 814	DD10000068	IN4003, Diode
D815	DD20000041	UZ18B, Zener Regulator
D816	DD10000100	IN4148, Diode
D901, 902	DD10000020	KBL-02/PBL-403, Rectifier
D903, 904	DD20000028	UZ20B, Zener Regulator
D905	DD10000068	IN4003, Detector
D906	DD20000065	UZ6.8B, 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
S504 - 505	SH12000326	4TR-2276, 2 Key Push Switch, Tape 1/2 and VCR 1/2.
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	PT21006144	TT-229-AF, Power Transformer (for A Version)
	PT21006296	TT-229-GF Power Transformer (for B, C Version)
T002	PT21006340	TT-230-AF-1, Power Transformer (for A Version)
	PT21006491	TT-230-GF Power Transformer (for B, C Version)
F601, 602	FU12000136	Fuse, 125V Long 6A (UL)
	FU23000086	Fuse, 250V6.3A (S)
F901-904	FU12000045	Fuse 250V4A (UL)
	FU23000049	Fuse 250V4A (S)