



# Technical Manual

# STEREO POWER AMPLIFIER RB-1080

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### Specification

Continuous Power Output	(20-20 kHz, ≤ 0.03%, 8 ohms)	200 watts/ch.
	(20-20 kHz, ≤ 0.05%, 4 ohms)	300 watts/ch.
Total Harmonic Distortion	(20 Hz-20 kHz, 8 ohms)	≤ 0.03%
Intermodulation Distortion	(60 Hz: 7 kHz, 4:1)	≤ 0.03%
Frequency Response		≥ 10-100,000 Hz, ± 1 dB
Damping Factor	(20-20,000 Hz, 8 ohms)	≥ 500
Speaker Impedance		4-16 ohms
Signal to Noise Ratio	(IHF A network)	120 dB
Input Impedance/Sensitivity	(RCA Inputs)	33 k Ohms/1.0 volt
(XLR Inputs)		33k Ohms/1.0 volt
Power Requirements		115 Volts, 60 Hz or
		230 Volts, 50 Hz
Power Consumption		550 Watts
Dimensions	(W, H, D)	440 x 127 x 385 mm
		17.38 x 4.76 x 15.16" inches
Weight	(net)	16.7 kg., 36.74 lb.

**THE ROTEL CO., LTD**  
 SHINSEN-BLD. 4F 10-10 SHINSEN-CHO, SHIBUYA-KU,  
 TOKYO 150-0045, JAPAN

Serial. NO. Beginning
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# Parts List-1

SYMBOL	PARTS NO.	DESCRIPTION
	<b>X-1177-01,02 PCB ASSY</b>	
C601.602	041 50BGF4R7M	CAPACITOR ELEC.50V4.7UF
C603.604	044 TFKP2-2A681H	CAPACITOR FILM 100V680PF
C607.608	041 25BGF100M	CAPACITOR ELEC.25V100UF
C609.610	044 FSC160V331H 054 TMF1/4-3302F	CAPACITOR STYROL 160V330PF RESISTOR MRS25 33K
C611.612	041 50BGF10M	CAPACITOR ELEC.50V10UF
C613-616	044 FSC160V561H	CAPACITOR STYROL 160V560PF
C623-626	041 VX2A102S	CAPACITOR ELEC.100V1000UF
C627.628	044 FSC160V471H	CAPACITOR STYROL 160V470PF
D601-608	034 T1N4148-86	DIODE
D609-612	034 T1N4003-TB	DIODE
FU601-604	036 5ST6.3	MINI FUSE 250VT6.3A
Q601-606	033 TC2362-FG	TRANSISTOR(2SC2362K-FG)
Q607-612	033 TA1016-FG	TRANSISTOR(2SA1016K-FG)
Q613.614	033 A1209-ST	TRANSISTOR(2SA1209-ST)
Q615.616	033 C2911-ST	TRANSISTOR(2SC2911-ST)
Q619.620	033 TC2910-RST	TRANSISTOR(2SC2910-RST)
Q621.622	033 TA1208-RST	TRANSISTOR(2SA1208-RST)
R601.602	054 EE10-102	RESISTOR METAL 1K
R603.604	054 EE10-333	RESISTOR METAL 33K
R605.606	054 EE10-471	RESISTOR METAL 470R
R607-610	054 TMFR401K5	RESISTOR METAL 1% 1.5K
R611.612	054 TMFR4220R	RESISTOR METAL 1% 220R
R613.614	054 TMF1/4-5600F	RESISTOR MRS25 560R
R615-618	054 TMFR401K5	RESISTOR METAL 1% 1.5K
R619.620	054 TMFR4220R	RESISTOR METAL 1% 220R
R621.622	054 TMFR4047K	RESISTOR METAL 1% 47K
R623.624	054 TMFR4100R	RESISTOR METAL 1% 100R
R625.626	054 TMF1/4-6801F	RESISTOR MRS25 6.8K
R627.628	054 TMF1/4-3901F	RESISTOR MRS25 3.9K
R629.630	054 TMFR4100R	RESISTOR METAL 1% 100R
R631.632	054 TMFR4001K	RESISTOR METAL 1% 1K
R633.634	054 TMFR4047R	RESISTOR METAL 1% 47R
R635-654	054 MPC78-0.22F	RESISTOR METAL 2W 0.22R
R657.658	054 TMFR415K4	RESISTOR METAL 1% 15.4K
R659-662	054 2WS6.8KJF	RESISTOR METAL 2W 6.8K
R663.664	054 TMFR4010R	RESISTOR METAL 1% 10R
R665.666	054 TMF3300	RESISTOR METAL 330R
R667-670	054 TMFR4220R	RESISTOR METAL 1% 220R
TH601.602	034 TTC-503	THERMISTOR
VR601.602	051 SFR001-222 017 C-4378A01 019 TO-126 066 4TR-2487#7 066 4TR-2487#8	SEMI-FIXED RESISTOR 2.2K HEAT SINKER INSULATION SHEET 1P PINJACK (RED) 1P PINJACK (WHT)
	068 C-4349A04 069 C-3417A 069 C-4446A00	3P CONNECTOR WIRE FUSE CLIP SCREW TERMINAL
	<b>X-1237-02 PCB ASSEMBLY</b>	
	069 C-4370A00	SCREW TERMINAL
	<b>X-1237-03 PCB ASSEMBLY</b>	
C801	041 UTES2A220-FB	CAPACITOR ELEC.100V22UF
C802	041 UTES1E101-FB	CAPACITOR ELEC.25V100UF
C803	041 UTES2A221	CAPACITOR ELEC.100V220UF

SYMBOL	PARTS NO.	DESCRIPTION
C804	041 UTES2A220-FB	CAPACITOR ELEC.100V22UF
D801	034 T1N4148-86	DIODE
D802	034 RD10EB	ZENER DIODE
D803-806	034 T1N4003-TB	DIODE
D807.808	034 T1N4148-86	DIODE
Q801-803	032 TC2362-FG	TRANSISTOR(2SC2362K-FG)
R801	054 1WS6.8KJF	RESISTOR METAL 1W 6.8K
R803	053 CR14-104J-A	RESISTOR CARBON 100K
R804	053 CR14-224J-A	RESISTOR CARBON 220K
R805	053 CR14-104J-A	RESISTOR CARBON 100K
R806	053 CR14-333J-A	RESISTOR CARBON 33K
R807	053 CR14-104J-A	RESISTOR CARBON 100K
R809	054 1WS6.8KJF	RESISTOR METAL 1W 6.8K
R811.812	053 CR14-104J-A	RESISTOR CARBON 100K
R813.814	053 CR14-183J-A	RESISTOR CARBON 18K
R815.816	053 CR14-332J-A	RESISTOR CARBON 3.3K
R817.818	053 CR14-273J-A	RESISTOR CARBON 27K
	<b>X-1237-04 PCB ASSEMBLY</b>	
C901.902	041 25BGF470M	CAPACITOR ELEC.25V470UF
D901.902	034 RD16EB	ZENER DIODE
Q901	033 D600-EF	TRANSISTOR(2SD600K-EF)
Q902	033 B631-EF	TRANSISTOR(2SB631K-EF)
R901.902	054 1WS2.2KJF	RESISTOR METAL 1W 2.2K
R903.904	054 1WS5.6KJF	RESISTOR METAL 1W 5.6K
RY901	063 V23106-24	RELAY (PROTECTION)
S901	064 4TR-2341 017 C-4401A01 019 TO-126	SLIDE SWITCH HEAT SINKER INSULATION SHEET
	<b>X-1237-05,06 PCB ASSY</b>	
C501.502	044 S50V100PJ	CAPACITOR STYROL 50V100PF
C505-508	041 25BGF100M	CAPACITOR ELEC.25V100UF
IC501.502	031 AD711JN	IC(OPE AMP)
R501-504	054 TMFR4022K	RESISTOR METAL 1% 22K
R505-508	054 TMFR4010K	RESISTOR METAL 1% 10K
R509.510	054 TMFR4001K 066 C-4575A01	RESISTOR METAL 1% 1K CANNON CONNECTOR
	<b>X-1283 PCB ASSEMBLY</b>	
C001	044 DE1307E472M	SPARK KILLER
S901	061 C-4176A07	POWER SWITCH
	<b>X-1291-01 PCB ASSEMBLY</b>	
C101	041 UTES1E471	CAPACITOR ELEC.25V470UF
C102	044 DE1307E472M	SPARK KILLER
D101	034 W02M	BRIDGED DIODE
D102	034 T1N4148-86	DIODE
F101	036 5ST500	MINI FUSE 250VT500MA
Q101	032 TC3708-ST	TRANSISTOR
R101	054 1WS120JF	RESISTOR METAL 1W 120R
R102	053 CR14-333J-A	RESISTOR CARBON 33K
R103	053 CR14-152J-A	RESISTOR CARBON 1.5K
RY101	063 OZ-SH-112LM1	RELAY (POWER)
T101	022 T-1075N01 069 C-3417A	SUB TRANSFORMER FUSE CLIP

## Parts List-2

SYMBOL	PARTS NO.	DESCRIPTION	SYMBOL	PARTS NO.	DESCRIPTION
<b>X-1291-02 PCB ASSEMBLY</b>					
D103.104	034 T1N4148-86	DIODE	015	RP-381	REAR CHASSIS
D105	034 TRD12JST1	ZENER DIODE	019	4TSH-19#2	PLASTIC FOOT 50F
D106	034 T1N4148-86	DIODE	022	T-1037W04	POWER TRANSFORMER
IC101	031 PC817B	PHOTO COUPLER	034	BR154	POWER DIODE
K103	068 C-4588A09	CONNECTOR WITH WIRE	034	SEL1124R	LED 1X5
R104	054 1WS1KJF	RESISTOR METAL 1W 1K	036	3AG125V12A	LONG FUSE 125V12A for STD
R105	053 CR14-221J-A	RESISTOR CARBON 220R	036	5ST6.3	MINI FUSE 250VT6.3A for CEE
S101	064 C-4613A01	TOGGLE SWITCH (TRIGGER)	041	ALS30S1077XX	CAPACITOR ELEC.80V15000UF
TJ101.102	065 YKB21-5103A	MINI JACK	044	KT18-2A104K	CAPACITOR FILM 100V0.1UF
<b>HEAT SINKER ASSEMBLY</b>			054	2WS10JF	RESISTOR METAL 2W 10R
Q617.618	032 D1953	TRANSISTOR(2SD1953)	067	4TR-2744#1	SPEAKER TERMINAL (RED)
Q623-632	033 A1492-OPY	POWER TRANSISTOR(2SA1492-OPY)	067	4TR-2744#2	SPEAKER TERMINAL (WHT)
Q633.634	033 B817-DE	DRIVER TRANSISTOR(2SB817-DE)	069	C-4200A01	LONG FUSE HOLDER for STD
Q635.636	033 D1047-DE	DRIVER TRANSISTOR(2SD1047-DE)	069	C-4595A00	MINI FUSE HOLDER for CEE
Q637-646	033 C3856-OPY	POWER TRANSISTOR(2SC3856-OPY)	069	C-4637A00	AC INLET
	017 PX4-06A00	HEAT SINKER	072	C-4392A02	AC CORD SET for STD
	019 TO-3P	INSULATION SHEET	072	C-4393A03	AC CORD SET for CEE
<b>OTHERS</b>			072	C-4423A03	AC CORD SET for AUSTRALIA
	011 FP-530	SUB PANEL ASSY	072	C-4639A01	AC CORD SET for UK
	011 RV4-02A05	H/S PANEL	081	TK4-01A00	INSIDE CARTON
	012 RV4-09A00	PUSH KNOB 14F	081	Z-200	STYROL MOULDING
	013 RM4-10A00T	EARTH PLATE			
	014 RV3-07A01	UPPER COVER			

**NOTE ON SAFTY :** Symbol Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

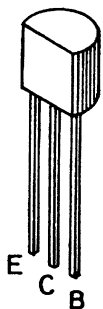
## Adjustment

Instruments : DC milli-voltmeter

Notes : Prior to Bias Adjustment, run about 5minutes with rated output(8ohms) and warm up Power Transistor and Heat Sink. Set input off.

Step	Coupling	Location	Adjust	Adjust for
1	TP 3 - TP 1	X-1177-01 PCB	VR601	DC milli-voltmeter reads 7mV
2	TP 4 - TP 2	X-1177-02 PCB	VR602	

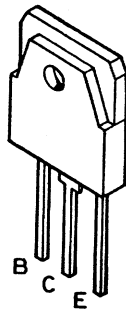
## Case Outline



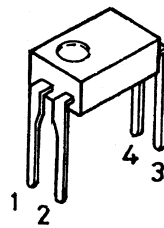
2SA1016K  
2SA1208  
2SC2362K  
2SC3708  
2SC2910



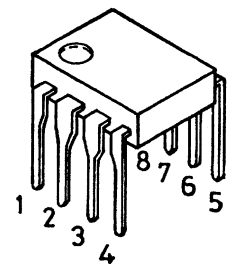
2SB631K  
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2SD1953  
2SD600K  
2SC2911



2SA1492  
2SB817  
2SC3856  
2SD1047

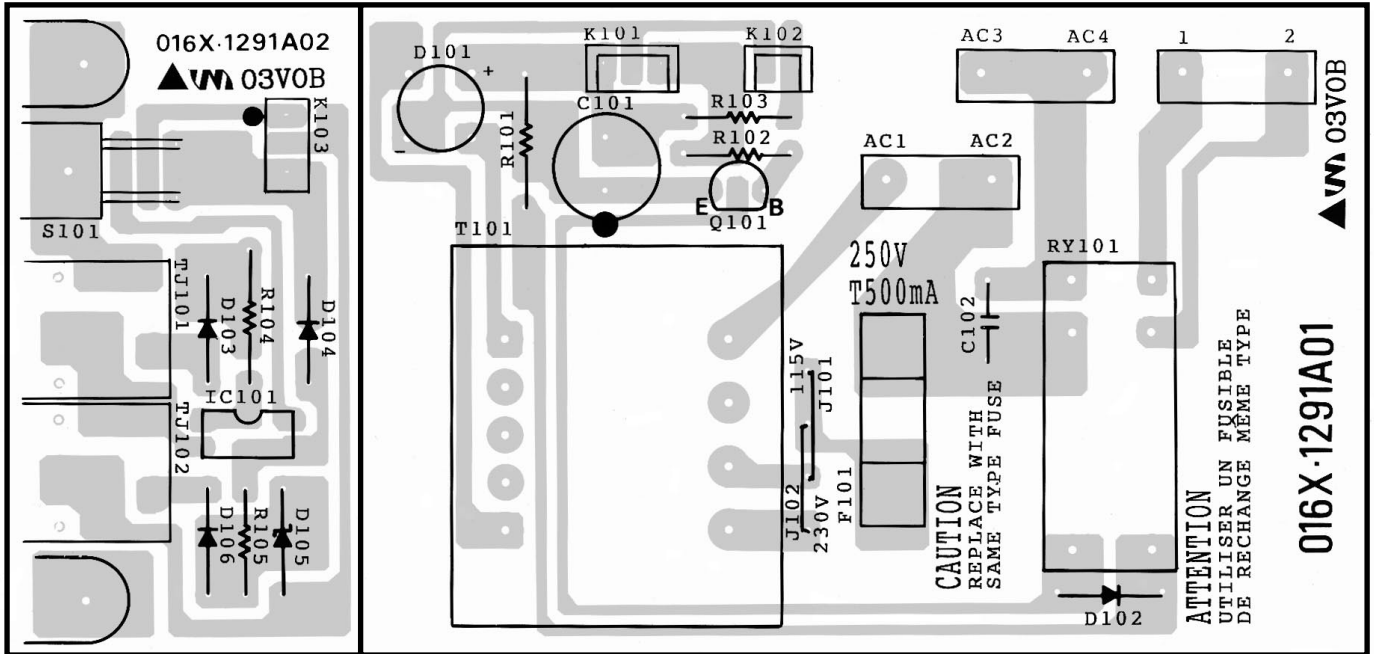


PC817B



AD711JN

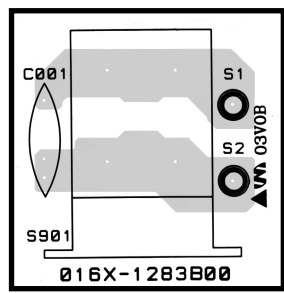
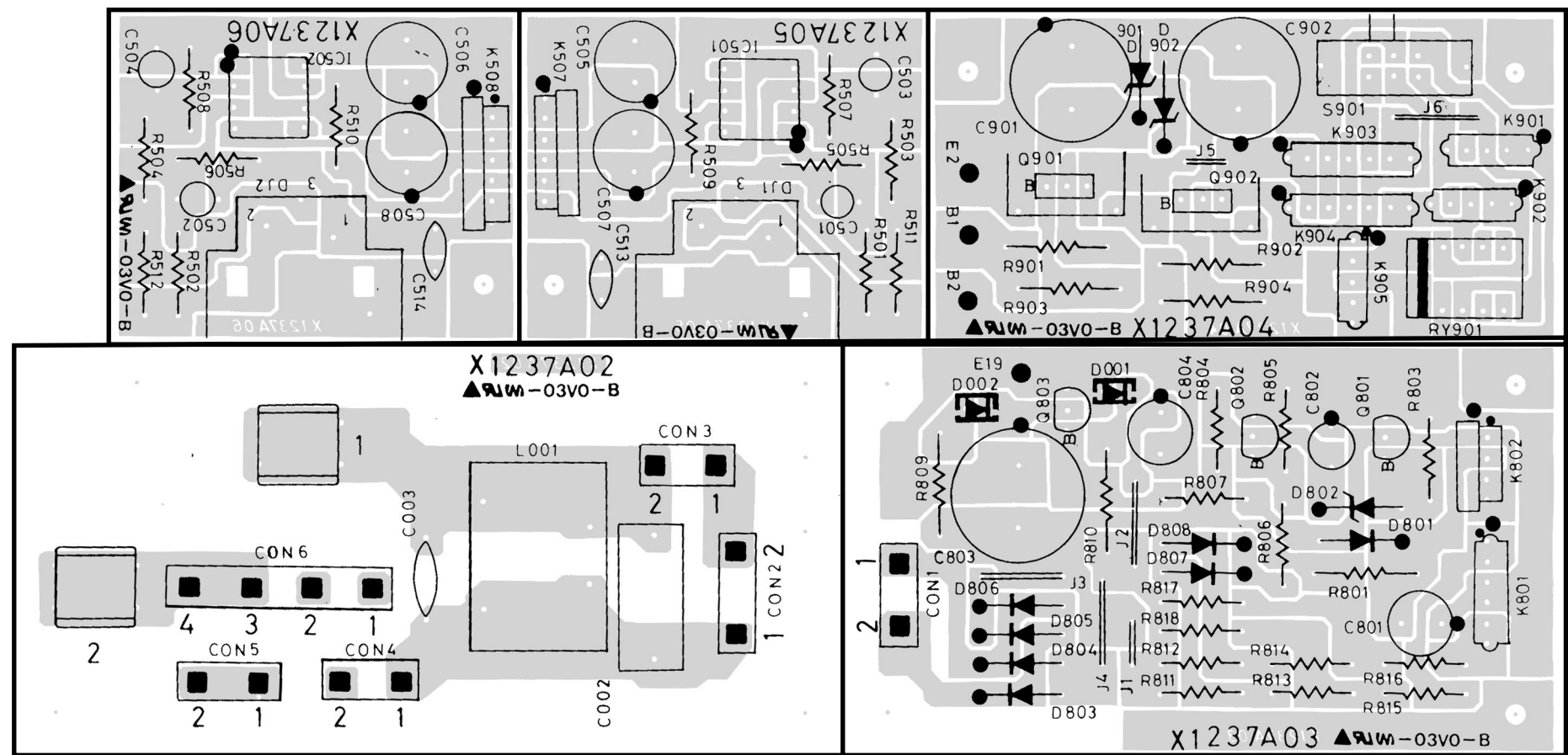
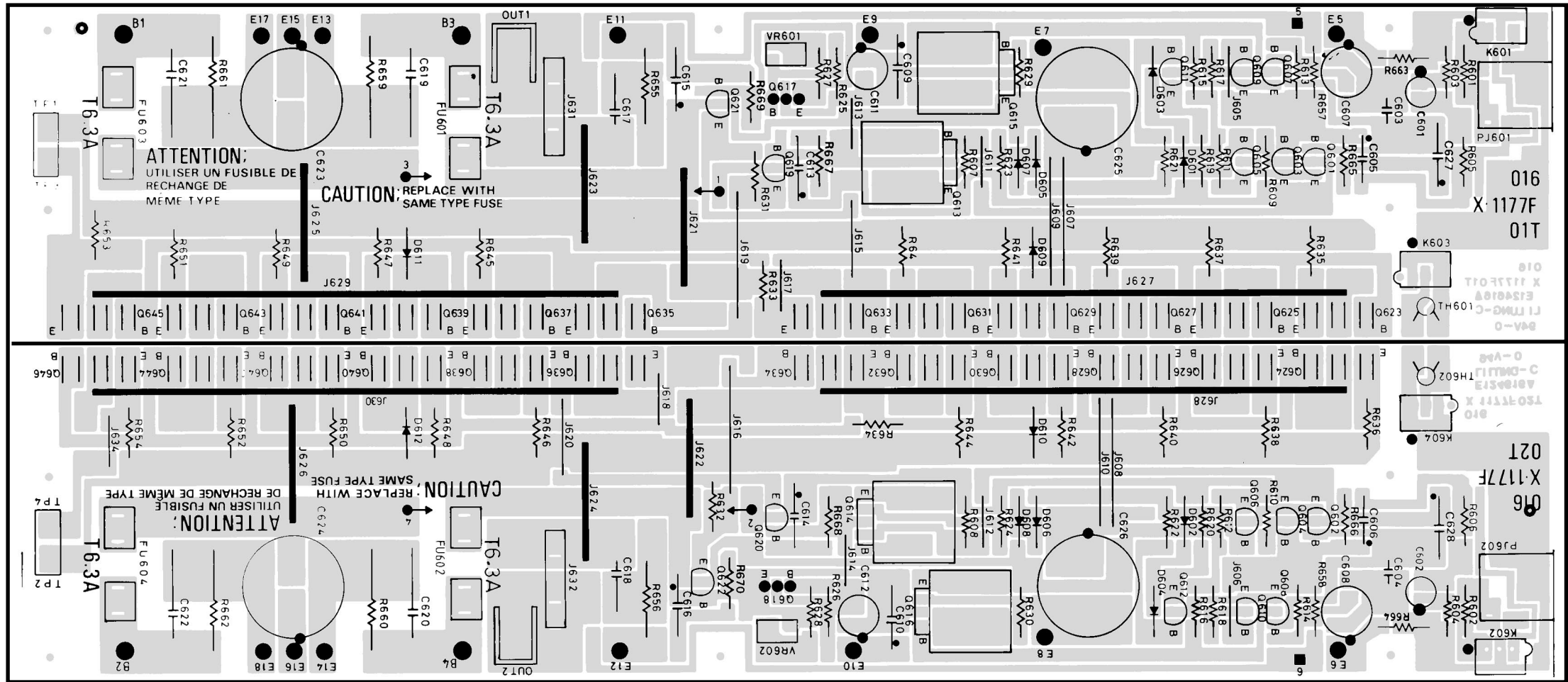
# PCB Assembly



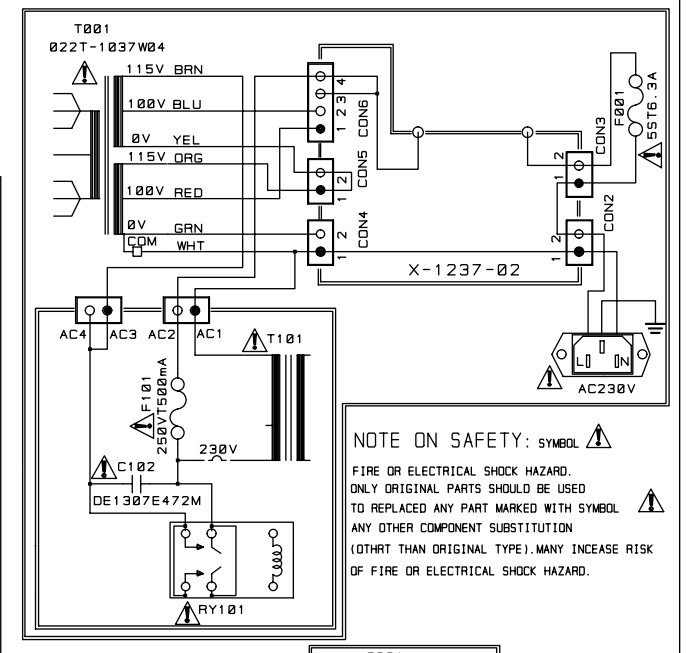
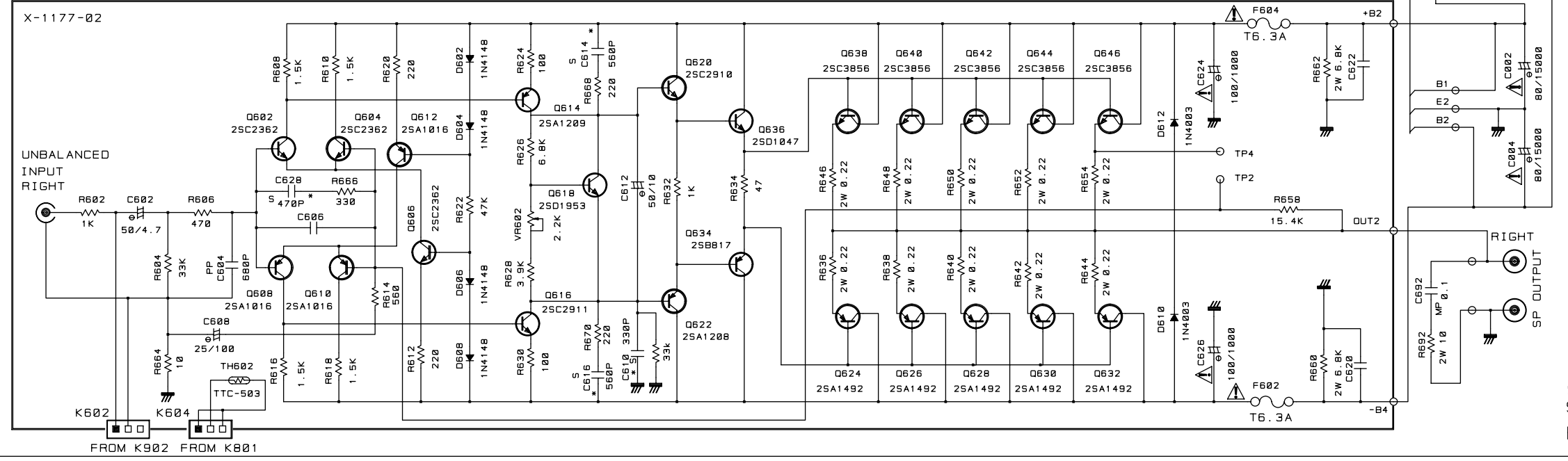
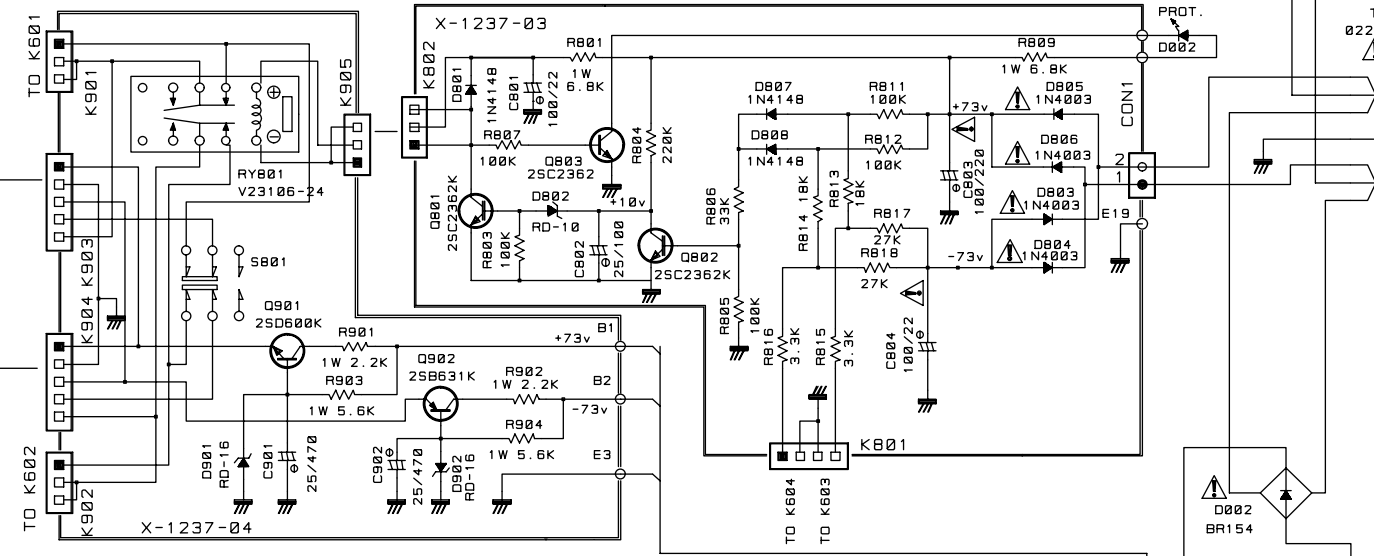
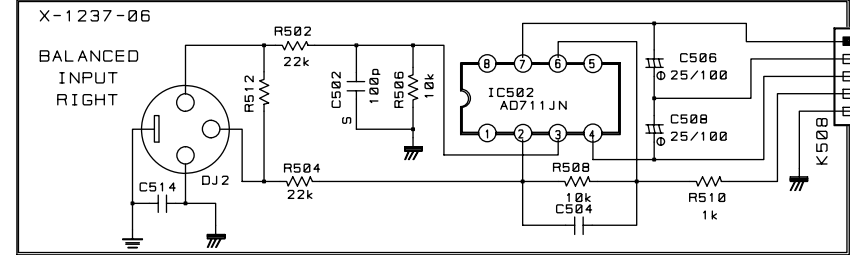
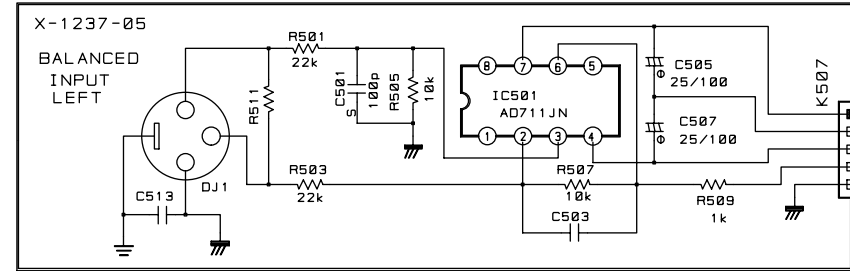
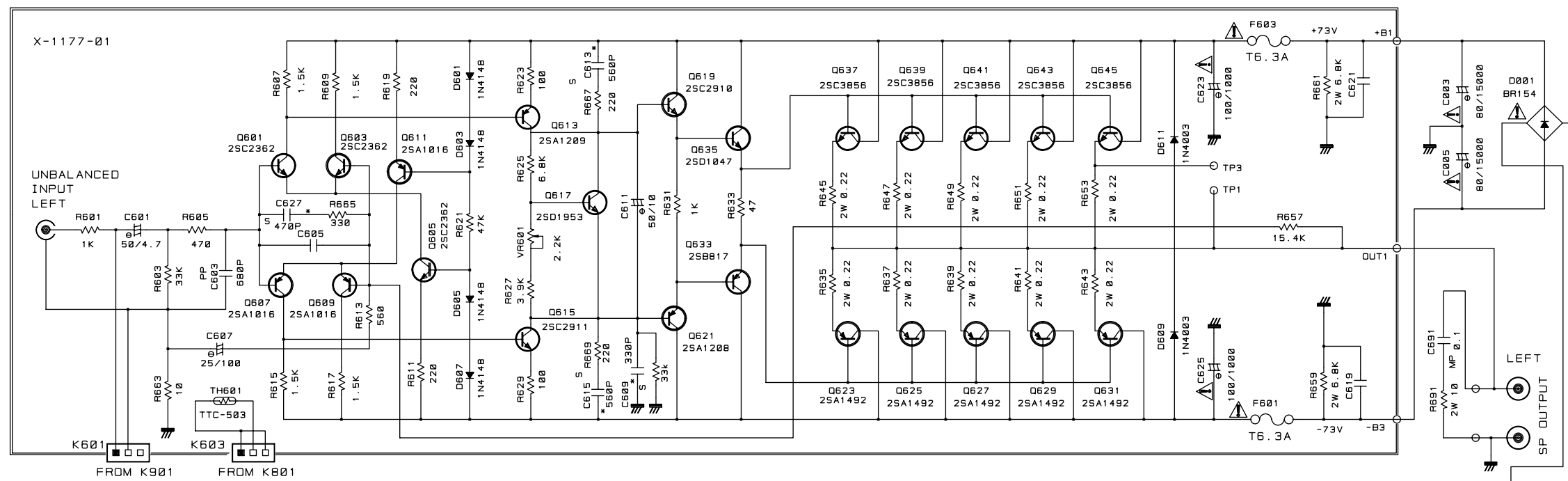
## Service Note

### Cautions during Inspection and Repair

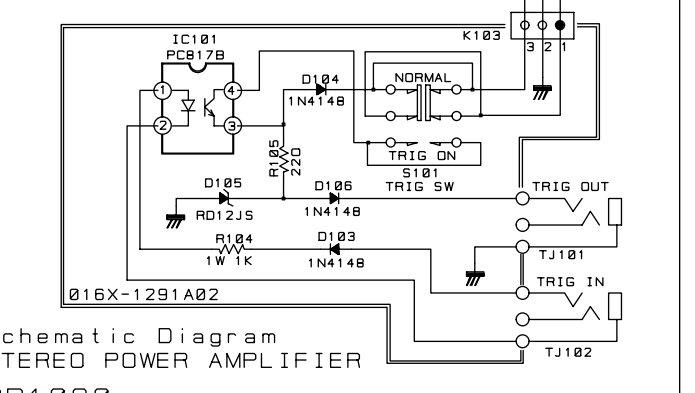
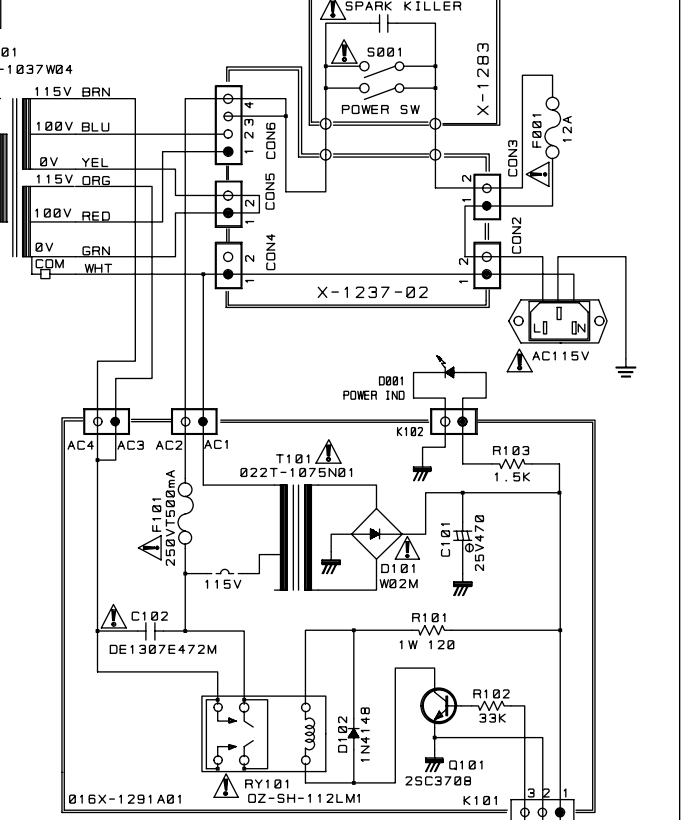
1. Keep in mind the safety warnings  
The safety instructions are shown as the labels or printings on the exterior, the inside chassis or the parts, etc. Refer to the instructions when proceeding with inspection or repair.
2. Use only the specified parts for replacement  
The selected parts are used at critical area to reduce fire hazard or electrical shock. So when replacing these parts where designaged with **!** marks or **marks on the schematic diagram or the parts list**, ensure to use only the same parts.
3. Ensure to dress back the AC (Mains) cord to the original position  
If for some reason, the AC cord is moved or partially disassembled, ensure to re-route or assemble back to the original position. The AC cord area is protected and secured by tubing and insulation materials for the sake of safety, so that no loose wire will touch and cause fire hazard and electrical shock.
4. Check for safety aspects after inspection or repair  
Ensure all parts, such as screws or wires, removed during inspection or repair are secured back to the original positions, and check visually for any anomaly. Also check for any electrical leakage or resistance to maintain the safety.



# Schematic Diagram



**NOTE ON SAFETY:** SYMBOL ⚡  
 FIRE OR ELECTRICAL SHOCK HAZARD.  
 ONLY ORIGINAL PARTS SHOULD BE USED  
 TO REPLACE ANY PART MARKED WITH SYMBOL ⚡  
 ANY OTHER COMPONENT SUBSTITUTION  
 (OTHER THAN ORIGINAL TYPE) MANY INCREASE RISK  
 OF FIRE OR ELECTRICAL SHOCK HAZARD.



Schematic Diagram  
 STEREO POWER AMPLIFIER  
 RB1080 DEC-07 2000