



# Technical Manual

# STEREO POWER AMPLIFIER RB-1090

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### Specification

Continuous Power Output (20-20kHz, < 0.03%)	380 wats/ch into 8 ohms 700 wats/ch into 4 ohms
Total Harmonic Distortion(20-20kHz, 8 ohms)	< 0.03 %
Intermodulation Distortion(60Hz : 7kHz, 4:1)	< 0.03 %
Frequency Responce ( $\pm 1$ dB)	10 Hz - 100 KHz
Dampning Factor(20-20,000kHz, 8 ohms)	1000
Speaker Impedance(combined load)	4 ohms minimum
Signal to Noise Ratio(IHF A network)	125 dB
Input Impedance / Sensitivity	33 k ohms / 1.8 volt
Power Requirement	115 volts 60 Hz or 230 volts 50 Hz
Power Consumption	800 watts
Dimensions(W x H x D)	440 x 240 x 398 mm 17 <sup>3</sup> / <sub>8</sub> x 9 <sup>1</sup> / <sub>2</sub> x 15 <sup>3</sup> / <sub>4</sub> inches
Weight (net)	38 kg, 83.6 Lb.

### THE ROTEL CO., LTD

BUNZAN-SHINSEN-BLD. 4F 10-10 SHINSEN-CHO, SHIBUYA-KU,  
TOKYO 150-0045, JAPAN

Serial. NO. Beginning
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# Parts List

SYMBOL	PARTS NO.	DESCRIPTION
<b>X-1271-01,02 PCB ASSEMBLY</b>		
C501,502	044	S50V100PJ CAP,STYROL 50V100PF
C505-508	041	25BGF100M CAP,ELEC.25V100UF
C601,602	041	50BGF4R7M CAP,ELEC.50V4.7UF
C603,604	044	TFKP2-2A681H CAP,FILM 100V680PF
C607,608	041	25BGF100M CAP,ELEC.25V100UF
C611,612	041	50BGF10M CAP,ELEC,50V10UF
C613-616	044	FSC160V221H CAP,STYROL 160V220PF
C623-626	041	VX2A102S CAP,ELEC.100V1000UF
C627,628	044	FSC160V471H CAP,STYROL 160V470PF
C701,702	041	UTSS1H220-FB CAP,ELEC.50V22UF
C703,704	041	UTSS1E221-FB CAP,ELEC.25V220UF
C705,706	041	UTSS1H4R7-FB CAP,ELEC.50V4.7UF
C707,708	041	UTSS1E470-FB CAP,ELEC.25V47UF
C717,718	041	UTSS1E100-FB CAP,ELEC.25V10UF
D601-608	034	T1N4148-86 DIODE
D609-612	034	T1N4003-TB DIODE
D615,616	034	T1N4148-86 DIODE
D701,702	034	T1N4148-86 DIODE
D713,714	034	T1N4148-86 DIODE
F601-604	036	5ST10 MINI FUSE 250VT10A
IC501,502	031	AD711JN IC
IC701,702	031	MPC1237HA IC
L601,602	021	TRL-380 SPEAKER COIL
Q601-606	033	TC2362-FG TRANSISTOR
Q607-612	033	TA1016-FG TRANSISTOR
Q613,614	033	A1142-EPQ TRANSISTOR
Q615,616	033	C2682-EPQ TRANSISTOR
Q619,620	032	C5174 TRANSISTOR
Q621,622	032	A1932 TRANSISTOR
Q651-656	033	TC2362-FG TRANSISTOR
Q657-662	033	TA1016-FG TRANSISTOR
Q667,668	033	A1142-EPQ TRANSISTOR
Q669,670	033	C2682-EPQ TRANSISTOR
Q745,746	033	TC2362-FG TRANSISTOR
Q747-750	033	TA1016-FG TRANSISTOR
R501-504	054	TMK2022KFECZ R,METAL 1% 22K
R505-508	054	TMK2010KFECZ R,METAL 1% 10K
R509,510	054	TMK2001KFECZ R,METAL 1% 1K
R601,601	054	EE10-152 R,METAL 1.5K
R603,604	054	EE10-333 R,METAL 33K
R607-610	054	TMK201K5FECZ R,METAL 1% 1.5K
R611,612	054	TMK2220RFECZ R,METAL 1% 220R
R613,614	054	TMF1/4-5600F R,MRS25 560R
R615-618	054	TMK201K5FECZ R,METAL 1% 1.5K
R619,620	054	TMK2220RFECZ R,METAL 1% 220R
R621,622	054	TMK2150KFECZ R,METAL 1% 150K
R623,624	054	TMK2100RFECZ R,METAL 1% 100R
R625,626	054	TMF1/4-6801F R,MRS25 6.8K
R627,628	054	TMF1/4-3901F R,MRS25 3.9K
R629,630	054	TMK2100RFECZ R,METAL 1% 100R

SYMBOL	PARTS NO.	DESCRIPTION
R631,632	054	TMK2001KFECZ R,METAL 1% 1K
R633,634	054	TMK2047RFECZ R,METAL 1% 47R
R635-642	054	MPC74-0.22F R,PLATE 5W 0.22R
R643,644	054	TMK2150KFECZ R,METAL 1% 150K
R645-652	054	MPC74-0.22F R,PLATE 5W 0.22R
R653,654	054	MPC71-1F R,PLATE 5W 1R
R657,658	054	TMK2056KFECZ R,METAL 1% 56K
R659-662	054	3WS6.8KJF R,METAL 3W 6.8K
R663,664	054	TMK2010RFECZ R,METAL 1% 10R
R665,666	054	TMF3300 R,METAL 330R
R667-670	054	TMK2220RFECZ R,METAL 1% 220R
R671-686	054	TMK2047KFECZ R,METAL 1% 47K
R687-690	054	TMK2100KFECZ R,METAL 1% 100K
R691,692	054	TMK2001MFECZ R,METAL 1% 1M
R693-696	054	TMK2047KFECZ R,METAL 1% 47K
R697,698	054	TMK2100KFECZ R,METAL 1% 100K
R699,700	054	TMK2022KFECZ R,METAL 1% 22K
R701,702	054	TMK2100KFECZ R,METAL 1% 100K
R703,704	054	TMK2120KFECZ R,METAL 1% 120K
R705,706	054	TMK2100KFECZ R,METAL 1% 100K
R709,710	054	TMK2068KFECZ R,METAL 1% 68K
R711,712	054	TMK2010KFECZ R,METAL 1% 10K
R713,714	054	TMK206K8FECZ R,METAL 1% 6.8K
R715-730	054	TMK2010RFECZ R,METAL 1% 10R
R731,732	054	TMK2001KFECZ R,METAL 1% 1K
R733,734	054	TMK2150KFECZ R,METAL 1% 150K
R771,772	054	TMK2560RFECZ R,METAL 1% 560R
R773,774	054	TMK2033KFECZ R,METAL 1% 33K
R775,776	054	TMK2015KFECZ R,METAL 1% 15K
R777,778	054	TMK201K2FECZ R,METAL 1% 1.2K
R779,780	054	TMK2560RFECZ R,METAL 1% 560R
R781-784	054	TMK2047KFECZ R,METAL 1% 47K
R785,786	054	TMK201K8FECZ R,METAL 1% 1.8K
R787,788	054	TMK204K7FECZ R,METAL 1% 4.7K
R789,790	054	1WS330JF R,METAL 1W 330R
RY601,602	063	DE2TU-24 RELAY
TH701,702	034	TTC-503 THERMISTOR
VR601-604	051	SFR001-222 SEMI-FIXED RESISTOR 2.2K
	017	4TR-2792#3 HEAT SINKER
	019	TO-126 INSULATION SHEET
	069	C-3417A FUSE CLIP
	069	C-4446A00 SCREW TERMINAL
<b>X-1271-03 PCB ASSEMBLY</b>		
DJ1,2	066	C-4575A01 CANON CONNECTOR
S401	064	C-4613A01 TOGGLE SWITCH
<b>X-1271-04 PCB ASSEMBLY</b>		
C901	044	DE1307E472M SPARKKILLER
D901	034	T1N4148-86 DIODE
R901,902	054	ERF10AJ100 R,WIREWOUND 10W 10R

# Parts Rist

SYMBOL	PARTS NO.	DESCRIPTION
RY901	063 DE2U-24	RELAY
TH901	063 UI300B	THERMOSTAT
TH902	034 SCK0512	THERMISTER
	069 C-4370A00	SCREW TERMINAL
<b>X-1271-05 PCB ASSEMBLY</b>		
C903,904	041 UTES1J221	CAP,ELEC.63V220UF
C910,911	041 25BGF470M	CAP,ELEC.25V470UF
D902	034 W02M	BRIDGED DIODE
D903,904	034 T1N4003-TB	DIODE
D905,906	034 TRD16JST1	ZENER DIODE
Q901	033 D600-EF	TRANSISTOR
Q902	033 B631-EF	TRANSISTOR
R707,708	054 TMK2022KEFCZ	R,METAL 1% 22K
R903	054 1WS330JF	R,METAL 1W 330R
R904	054 2WS1.8KJF	R,METAL 2W 1.8K
R905	054 TMK206K8FECZ	R,METAL 1% 6.8K
R908,909	054 TMK201K5FECZ	R,METAL 1% 1.5K
<b>X-1271-06 PCB ASSEMBLY</b>		
S901	061 C-4176A07	POWER SWITCH
<b>X-1271-07,08 PCB ASSEMBLY</b>		
C691,692	044 KT18-2E104J	CAP,FILM 250V0.1UF
R655,656	054 3WS10JF	R,METAL 3W 10R
<b>HEAT SINKER ASSEMBLY</b>		
Q617,618	032 D1953	TRANSISTOR
Q623-630	033 A1295-OY	POWER TRANSISTOR
Q633,634	033 A1294-OY	DRIVER TRANSISTOR
Q635,636	033 C3263-OY	DRIVER TRANSISTOR
Q637-644	033 C3264-OY	POWER TRANSISTOR

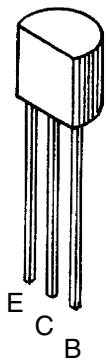
SYMBOL	PARTS NO.	DESCRIPTION
	017 SG4-08A00	HEAT SINKER BOARD
	019 TO-3P	INSULATION SHEET(S)
	019 TO-3P2	INSULATION SHEET(L)
<b>OTHERS</b>		
	011 FP-499	FRONT PANEL ASSY
	011 SG4-02A00	H/S SUB PANEL
	012 RV4-09A00	PUSH KNOB 14F
	014 SG3-18A00	UPPER COVER
	015 RP-354A	REAR CHASSIS
	019 C-4418A00	PLASTIC FOOT 26F
	019 C-4638A00	CASTER
	019 4TSH-19#2	PLASTIC FOOT 50F
	022 T-1061U01	POWER TRANSFORMER
	022 T-1064U01	POWER TRANSFORMER
	034 BR254	POWER DIODE
	034 LTL1214A	PROTECTION IND.LED
	034 SEL1124R	POWER IND.LED
	041 ALS30S1072MF	CAP,ELEC.100V22000UF
	066 C-4641A01	1P PIN JACK
	067 4TR-2744#1	SPEAKER TERMINAL(RED)
	067 4TR-2744#2	SPEAKER TERMINAL(BLK)
	069 C-4637A00	AC INLET
	072 C-4392A02	AC CORD SET for STD
	072 C-4393A03	AC CORD SET for CEE
	072 C-4423A03	AC CORD SET for AUSTRALIA
	072 C-4639A01	AC CORD SET for UK
	081 SG4-22A00	INSIDE CARTON
	081 SG4-24A00	PACKING
	081 Z-200	STYROL MOULDING

# Adjustment

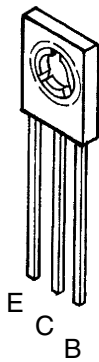
Instruments : DC milli-voltmeter

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

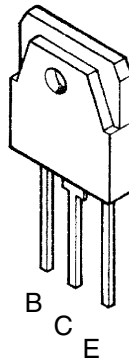
Step	Coupling	Location	Adjust	Adjust for
1	L CH OUT	X-1271-01 PCB	VR603	DC milli-voltmeter reads 0mV
2	R CH OUT	X-1271-02 PCB	VR604	
3	TP1	X-1271-01 PCB	VR601	DC milli-voltmeter reads 5mV
4	TP2	X-1271-02 PCB	VR602	



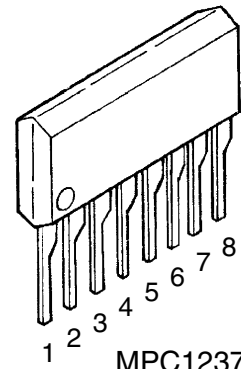
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2SC2362K



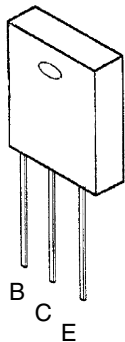
2SB631K  
2SD600K  
2SA1142  
2SC2682  
2SD1953



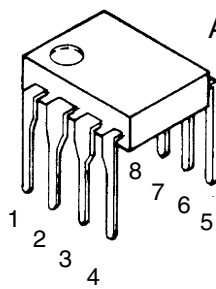
2SA1294  
2SC3263



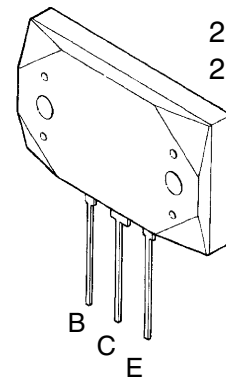
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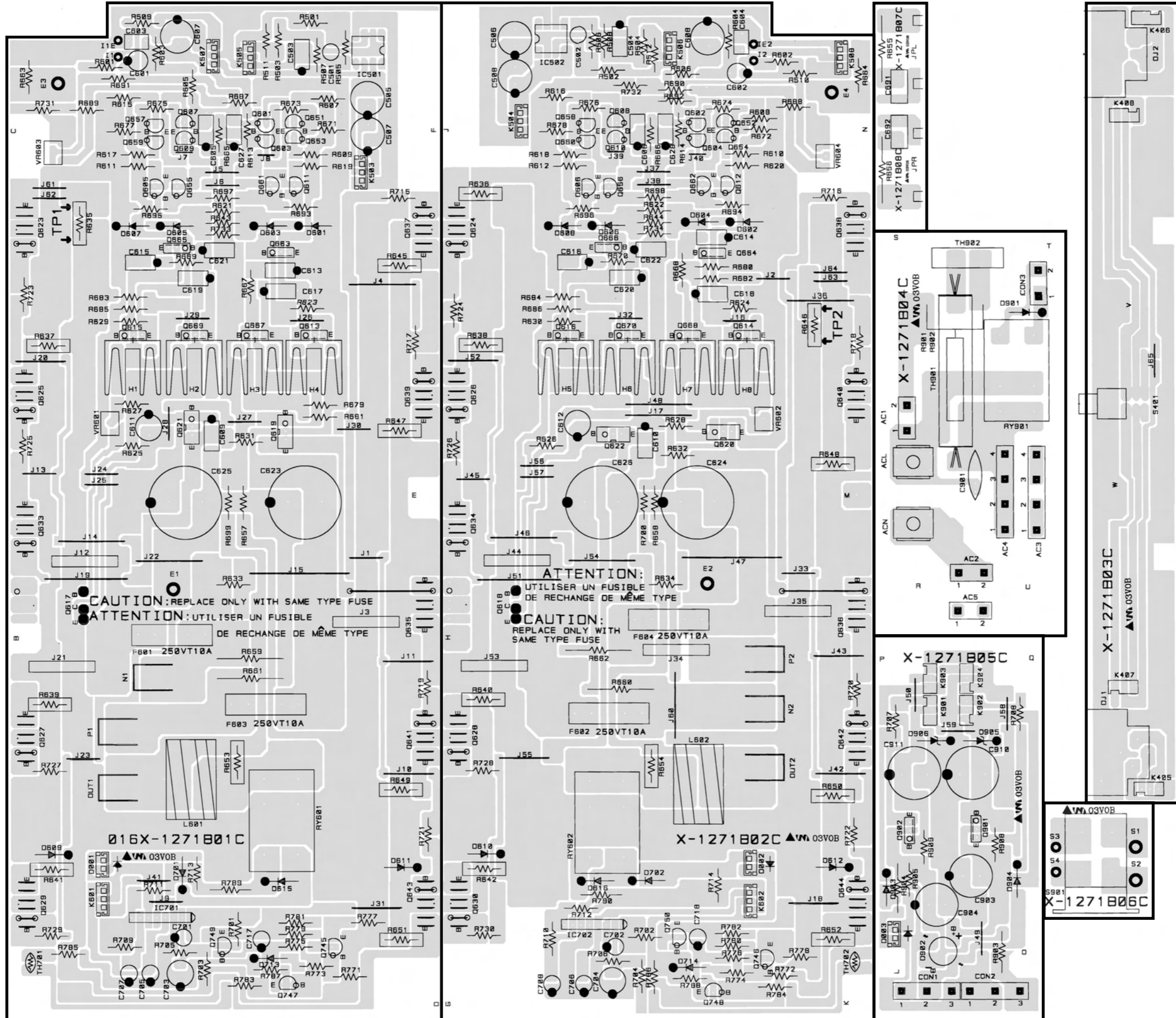
2SC5174  
2SA1932



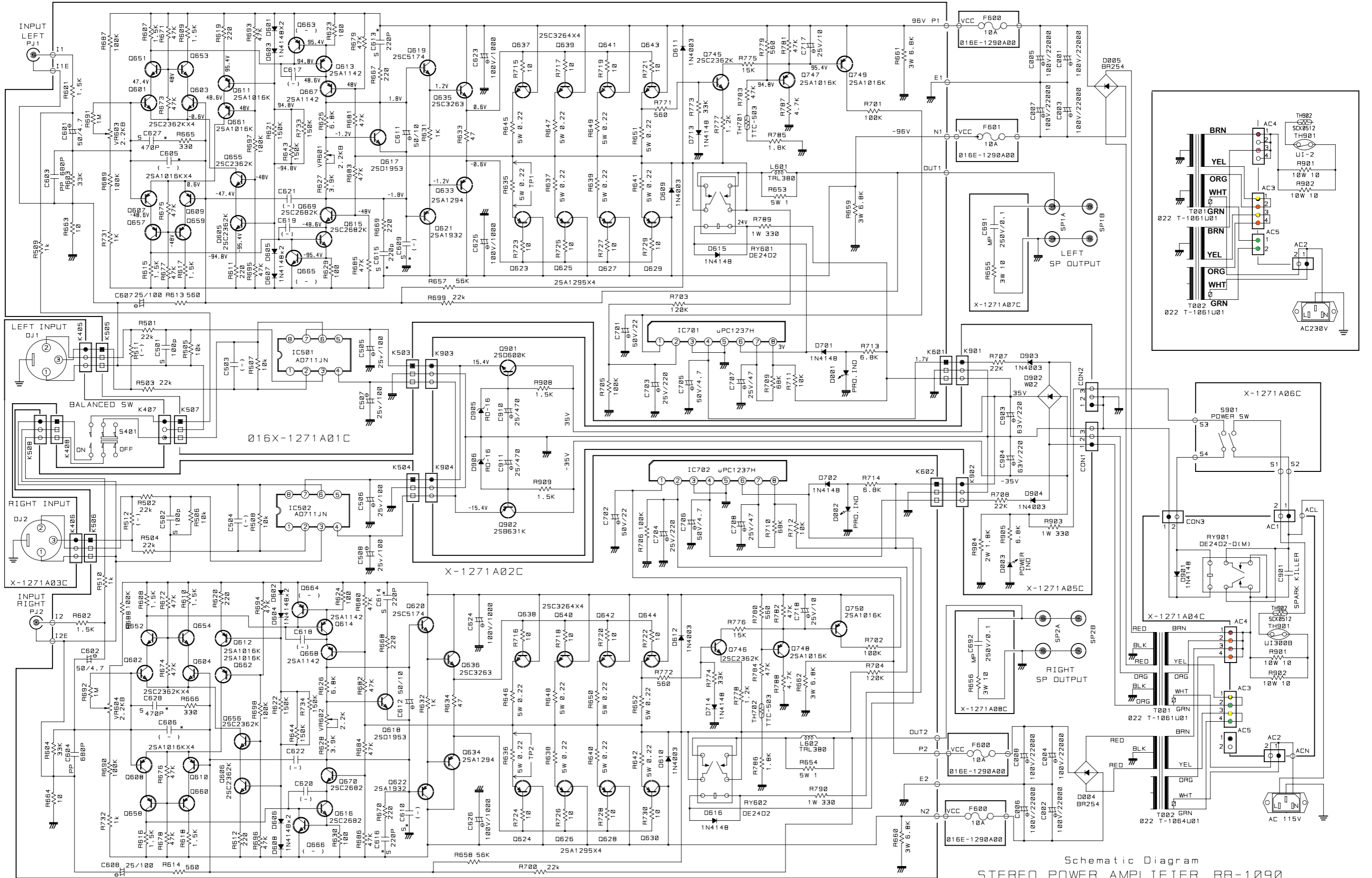
AD711JN



2SA1295  
2SC3264



# Schematic Diagram



Schematic Diagram  
STEREO POWER AMPLIFIER RB-1090