

ROTEL*hi-fi*

STEREO CONTROL AMPLIFIER

RC-970BX

TECHNICAL MANUAL

TABLE OF CONTENTS

Specifications.....	1
Chassis Layout.....	2
Wiring Diagram.....	3
Printed Circuit Board.....	4
Schematic Diagram.....	5
PC Board Ass'y Parts List.....	6

THE ROTEL CO., LTD.

1-36-8, OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN

ROTEL ELECTRONICS CO., LTD.

3F-2, NO.35, FU HSING NORTH ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA

MN20002127

Specifications

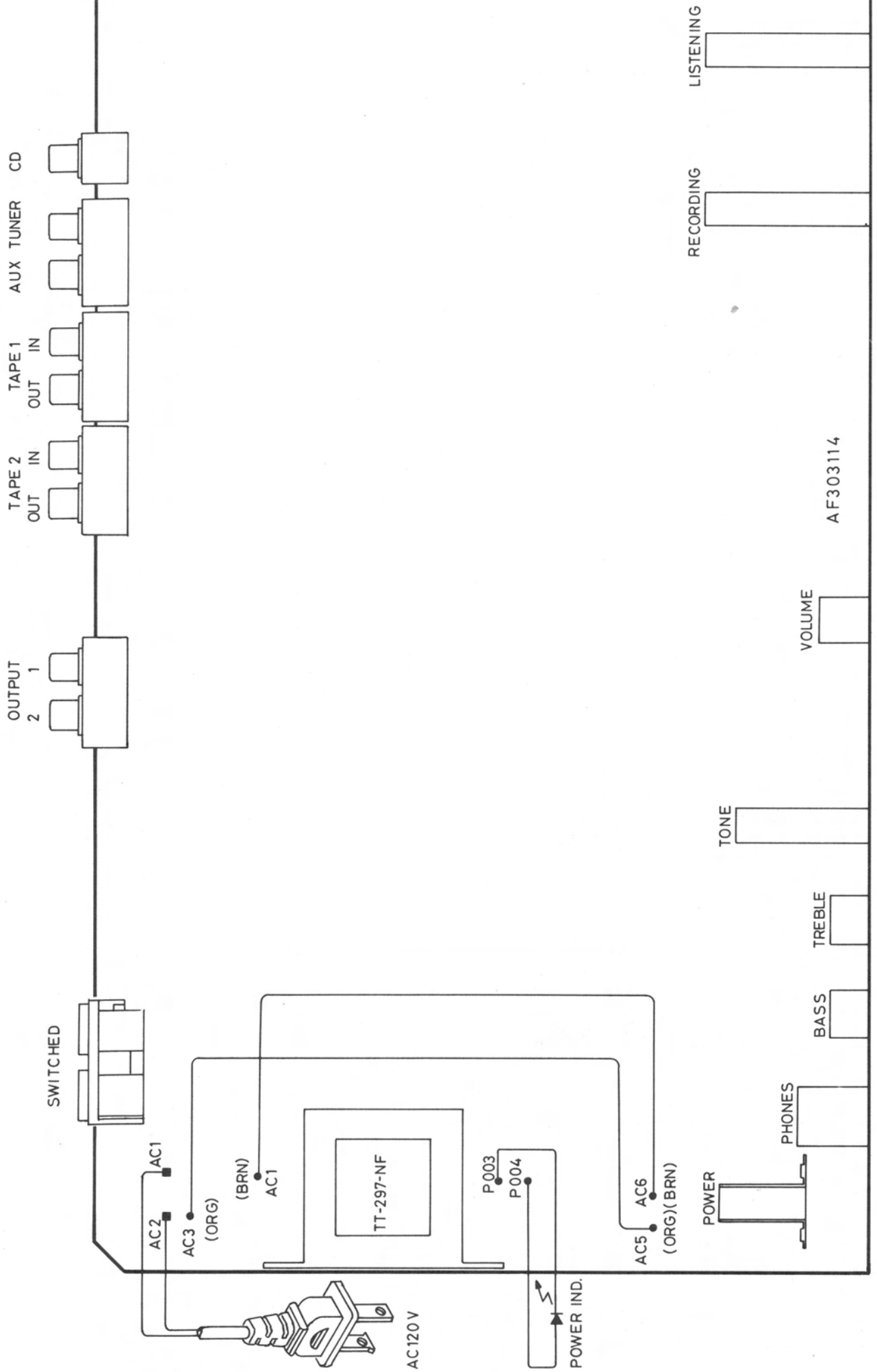
Total Harmonic Distortion	No more than 0.004% (Rated output) (CD/TUNER, 20 Hz to 20 kHz)	
Intermodulation Distortion	No more than 0.004% (Rated output) (CD/TUNER, 60 Hz : 7 kHz = 4:1)	
Output (Headphones)	8 to 2,000 ohms	
Input Sensitivity/Impedance	CD, TUNER:	150 mV / 24 kohms
	AUX, TAPE1,2:	150 mV / 24 kohms
Output Sensitivity/Impedance	1.0 V / 100 ohms	
Overload Level (THD 0.5 %, 1 kHz).....	CD, TUNER:	5 V
	AUX, TAPE1,2:	5 V
Frequency Response	CD, TUNER:	4 to 100 kHz, + 0 dB - 3 dB
	AUX, TAPE1,2:	4 to 100 kHz, + 0 dB - 3 dB
Tone Countrol.....	BASS:	100 Hz, $\pm$ 6 dB
	TREBLE:	10 kHz, $\pm$ 6 dB
Signal to Noise Ratio (IHF, A network).....	CD, TUNER:	95 dB
	AUX, TAPE1,2:	95 dB

GENERAL

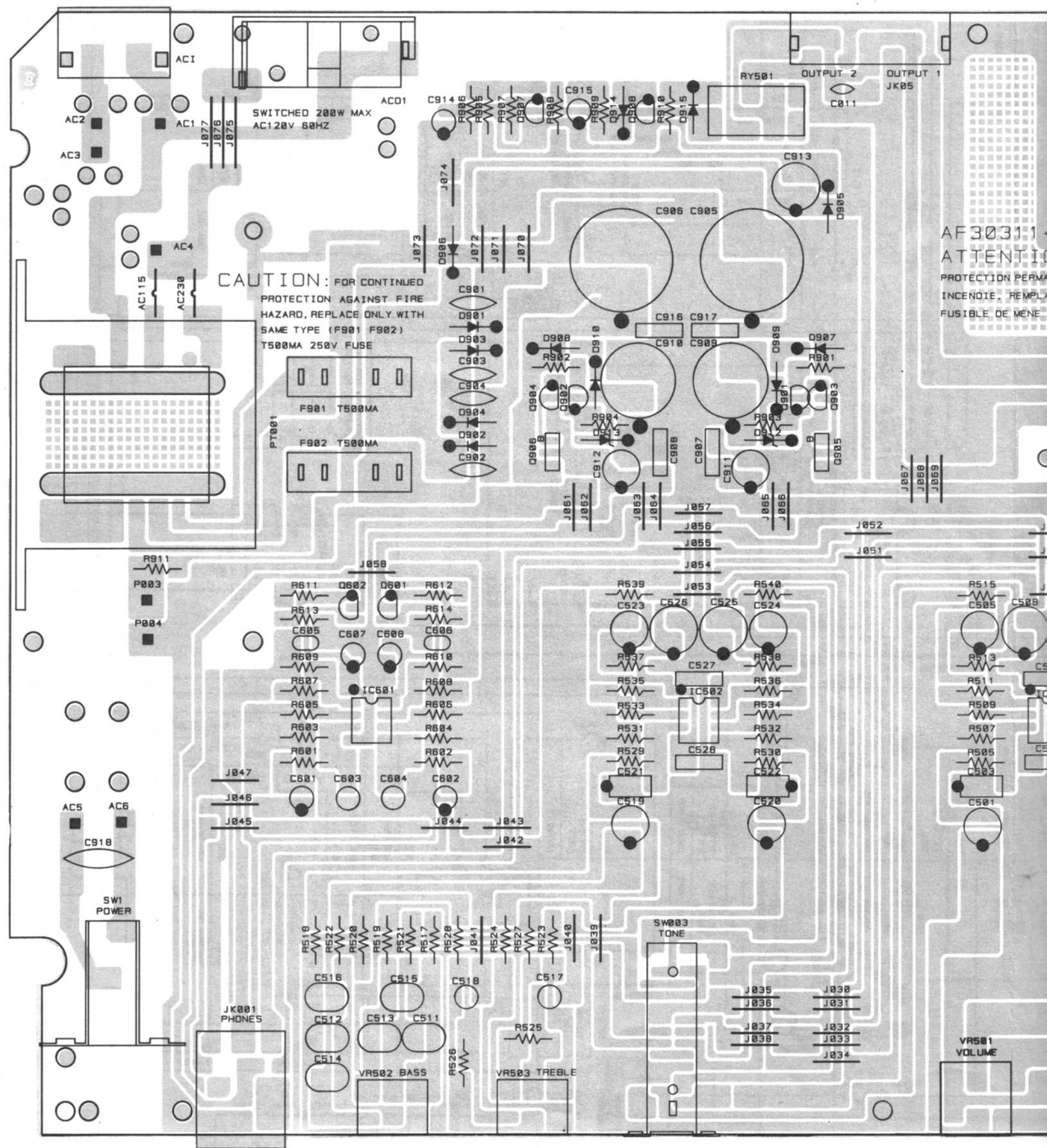
Power Requirement	120 V/60 Hz, 220-240 V/50 Hz (depending on destination)	
Power Consumption.....	10 watts	
Dimension (overall)	440 (W) x 70 (H) x 325 (D) mm	
	17-1/3" (W) x 2-3/4" (H) x 12-4/5" (D)	
Weight (net).....	4.0 kg / 8.8 lbs	

NOTE: Specifications and design are subject to possible modification without notice.

Wiring Diagram



Printed Circuit Boards



OUTPUT 1
JK05

TAPE 2 OUT

TAPE 2 IN
JK04

TAPE 1 OUT

TAPE 1 IN
JK03

AUX

TUNER
JK02

CD
JK01

C001

C002

C003

C004

C005

C006

C007

C008

C009

R501

R502

R503

R504

C010

AF303114

ATTENTION: AFIN D' ASSURER UNE
PROTECTION PERMANENTE CONTRE LES RISQUES D'
INCENDIE, REMPLACER UNIQUEMENT PAR UN
FUSIBLE DE MENE TYPE, (F901 F902) T500MA 250V

J060

J059

J050

J049

J048

R516

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

C504

C505

C506

C507

C508

C509

C510

C501

C502

C503

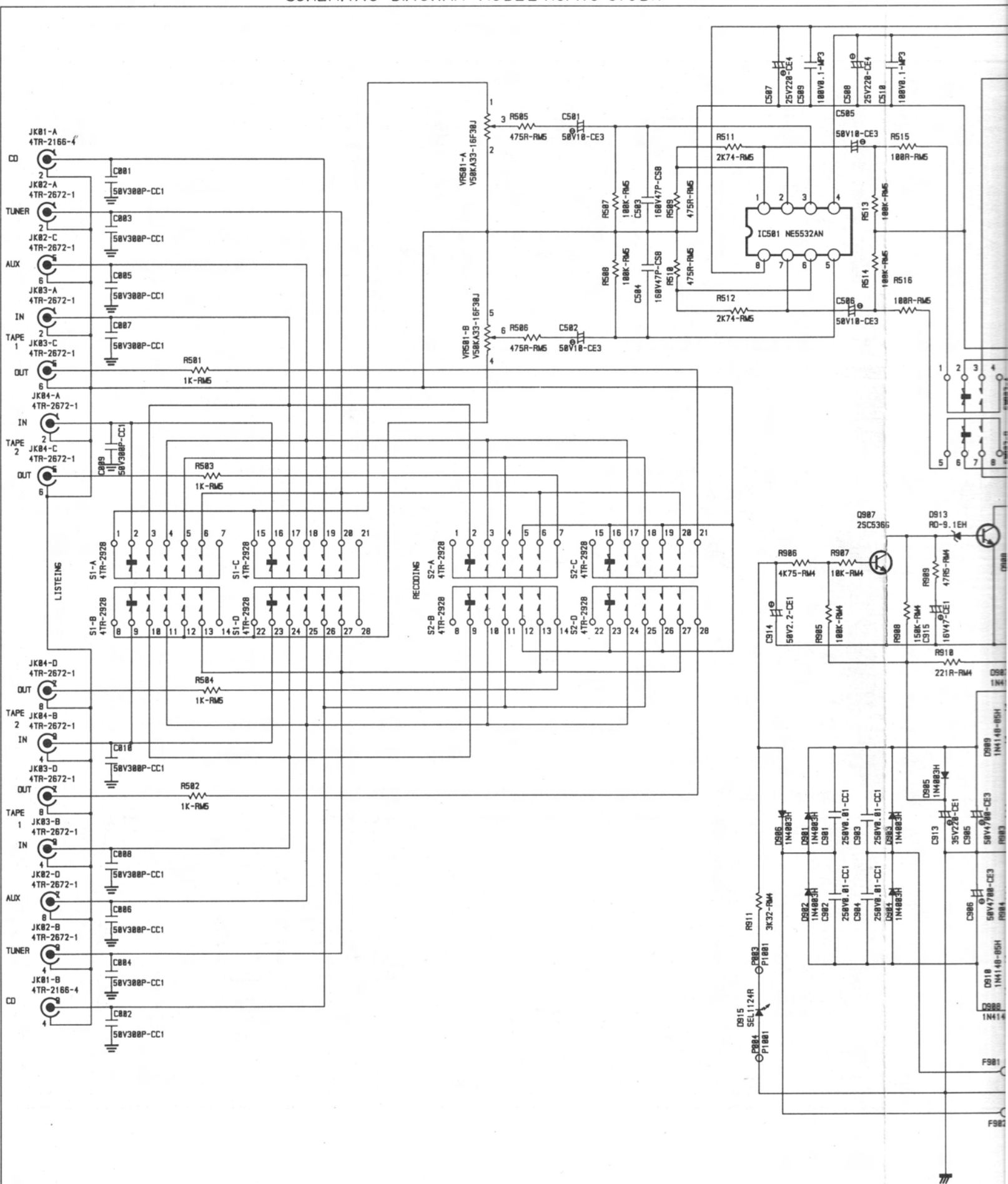
C504

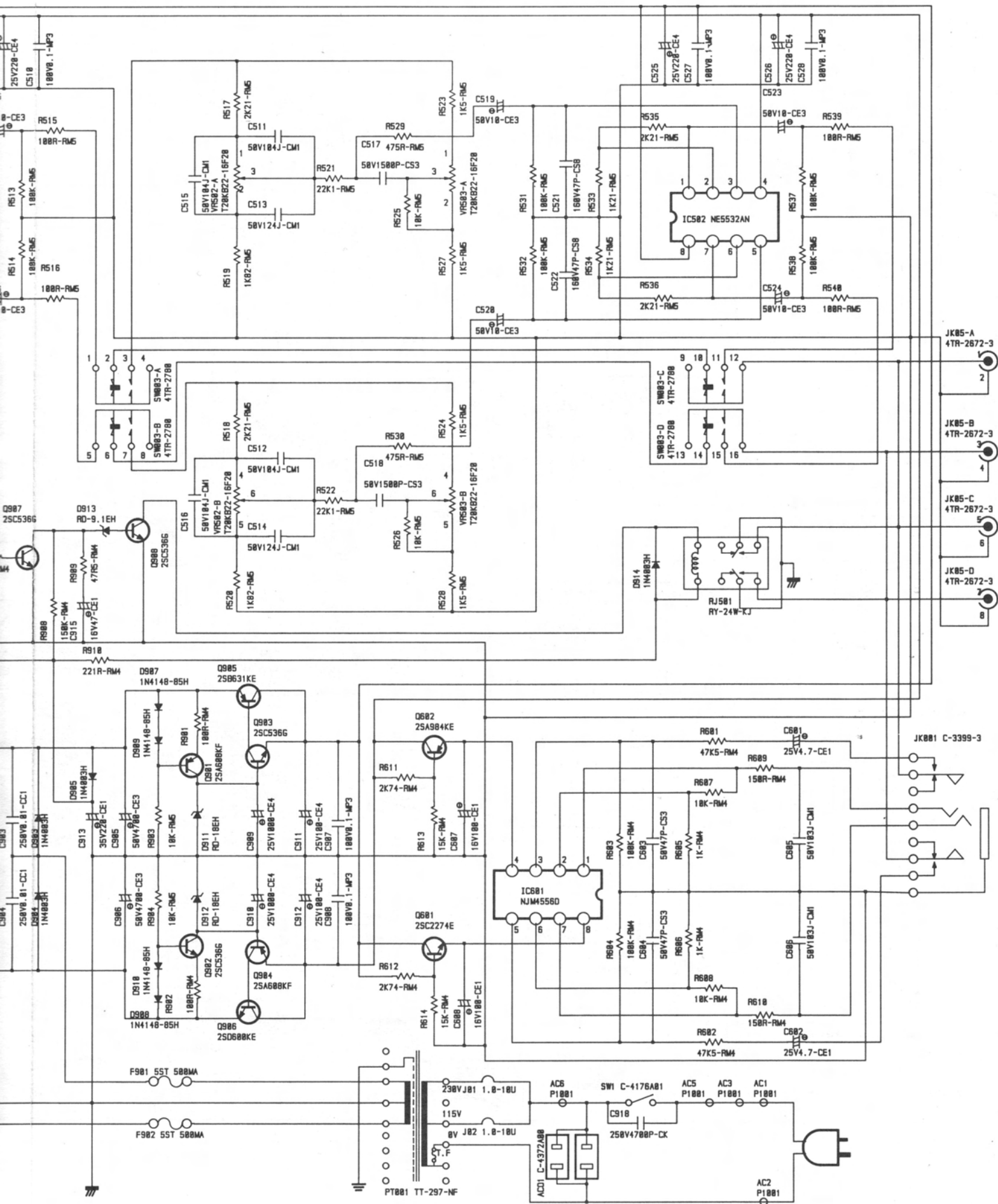
C505

C506

C507

SCHEMATIC DIAGRAM MODEL NO. RC-970BX





Parts List

NOTE: THE COMPONENTS IDENTIFIED BY Δ MARK ARE FOR SAFETY. REPLACE ONLY WITH ORIGINAL PARTS. DO NOT SUBSTITUTE.

SYMBOL	PARTS NO.	DESCRIPTION	SYMBOL	PARTS NO.	DESCRIPTION
PCB ASSEMBLY					
AC01	SA00002193	AC INLET SOCKET C-4372A00 Δ	R531-532	RM81003610	RESISTOR MK2100KFECZ. METAL
C001-10	CC03011436	CAP. 50V 300PF SL CERAMIC	R533-534	RM81211618	RESISTOR MK21K21FECZ. METAL
C501-502	CE51006477	CAP. 50BGF10M ELEC.	R535-536	RM82211614	RESISTOR MK22K21FECZ. METAL
C503-504	CS34712311	CAP. 160V 47PF STYROL	R537-538	RM81003610	RESISTOR MK2100KFECZ. METAL
C505-506	CE51006477	CAP. 50BGF10M ELEC.	R539-540	RM81000619	RESISTOR MK2100RFECZ. METAL
C507-508	CE72205256	CAP. ECEA1EF221 ELEC.	R601-602	RM54752810	RES. 47.5K F 1/4W METAL
C509-510	CP61008321	CAP. MKT18-100V104K M.P	R603-604	RM51003813	RES. 100K F 1/4W METAL
C511-512	CM01008423	CAP. 50V 104J MYLAR	R605-606	RM51001816	RES. 1K F 1/4W METAL
C513-514	CM01208424	CAP. 50V 124J MYLAR	R607-608	RM51002810	RES. 10K F 1/4W METAL
C515-516	CM01008423	CAP. 50V 104J MYLAR	R609-610	RM51500810	RES. 150 F 1/4W METAL
C517-518	CS41510426	CAP. 50V 1500PF (J) STYROL	R611-612	RM52741819	RES. 2.74K F 1/4W METAL
C519-520	CE51006477	CAP. 50BGF10M ELEC.	R613-614	RM51502817	RES. 15K F 1/4W METAL
C521-522	CS34712311	CAP. 160V 47PF STYROL	R901-902	RM51000812	RES. 100 F 1/4W METAL
C523-524	CE51006477	CAP. 50BGF10M ELEC.	R903-904	RM81002616	RES. MK2010KFECZ. METAL
C525-526	CE72205256	CAP. ECEA1EF221 ELEC.	R905	RM51003813	RES. 100K F 1/4W METAL
C527-528	CP61008321	CAP. MKT18-100V104K M.P	R906	RM54751816	RES. 4.75K F 1/4W METAL
C601-602	CE04707252	CAP. SK 25V 4.7UF ELEC.	R907	RM51002810	RES. 10K F 1/4W METAL
C603-604	CS44712423	CAP. 50V 47PF (J) STYROL	R908	RM51503810	RES. 150K F 1/4W METAL
C605-606	CM01009427	CAP. 50V 103J MYLAR	R909	RM54759815	RES. 47.5 F 1/4W METAL
C607-608	CE01005167	CAP. SK 16V 100UF ELEC.	R910	RM52210814	RES. 221 F 1/4W METAL
C901-904	CC01009256	CAP. 250V 0.01UF CERAMIC	R911	RM53321814	RES. 3.32K F 1/4W METAL
C905-906	CE54704477	CAP. 50VRS4700A ELEC.	RJ501	LY00000277	RELAY RY-24W-KJ(DPDT)
C907-908	CP61008321	CAP. MKT18-100V104K M.P	S1-2	SH30000572	FUNCTION SW 4TR-2928
C909-910	CE71004255	CAP. ECEA1EF102 ELEC.	SW003	SH30000500	FUNCTION SW 4TR-2780
C911-912	CE71005259	CAP. ECEA1EFS101 ELEC.	SW1	SH40000155	POWER SW C-4176A01 TV-5
C913	CE02205358	CAP. SK 35V 220UF ELEC.	VR501	RV10001577	VR C-4170A17 50KAX2 VOLUME
C914	CE02207501	CAP. SK 50V 2.2UF ELEC.	VR502-503	RV10001541	VR 4TR-2774 20KBX2 TONE
C915	CE04706168	CAP. SK 16V 47UF ELEC.	OTHERS		
C918	CK00000035	CAP. DE7150F742M SPARK KILLER Δ	AB00000705		PAINTED BOTTOM BOARD 4TQN-12B#3
D901-906	DD10000068	DIODE 1N4003 1A 140V RTFR	AF20000260		FRONT CHASSIS 2TQI-2A
D907-910	DD10000100	DIODE 1N4148 1A 75V DETECT	AR20000700		PRINTED REAR CHASSIS TRP-629
D911-912	DD20000041	DIODE RD-18E (B3) ZENER	AS01000385		SIDE CHASSIS 3TQG-1C#3
D913	DD20000132	DIODE RD-9.1E (B3) ZENER	FT00000229		PLASTIC FOOT 4TSH-19#2
D914	DD10000068	DIODE 1N4003 1A 140V RTFR	SB00000868		50FX14H P.V.C. SHIELD PLATE 4TR-2986A
D915	DD40000095	DIODE SEL1124R 1X5 RED	SB00000947		P.V.C SHIELD PLATE 4TQI-5#2
F901-902	FU23000360	FUSE BEL 5ST 250V 500MA Δ	SC00000027		AC CORD STOPPER SR-4N-4 Δ
IC501-502	IC000001693	IC NE5532AN DUAL OP AMP	NP00001949		NAME STICKER AC120V 4TR-2828A#1 TNP-382
IC601	IC000001474	IC NJM4556D DUAL OP AMP	NP00001974		NAME STICKER AC120V-C 4TR-2828A#4 TNP-385
JK001	JH00000070	HEAD PHONE JACK C-3399#3	NP00001962		NAME STICKER AC240V 4TR-2828A#3 TNP-384
JK01	JP02000211	2P PIN JACK 4TR-2166#4	NP00001998		NAME STICKER AC230V 4TR-2828A#5 TNP-389
JK02-4	JP04000187	4P PIN JACK 4TR-2672#1	NP00002012		NAME STICKER AC100V 4TR-2828A#6 TNP-391
JK05	JP04000205	4P PIN JACK 4TR-2672#3	NP00001950		NAME STICKER AC220V 4TR-2828A#2 TNP-383
PT001	PT29710109	POWER TRANSFORMER TT-297-NF Δ	CD00000218		AC CORD SPT-2 4TR-670#4 (C,U,A,J) Δ
Q601	TR30000121	TRANSISTOR 2SC2274(E.F)	CD00000322		AC POWER CORD 4TR-2757 (D) Δ
Q602	TR10000140	TRANSISTOR 2SA984K(E.F)	CD00000048		AC POWER CORD 4TR-1037 (H,E,Y1,Y2,S1) Δ
Q901	TR10000126	TRANSISTOR 2SA608K(F.G)	CD00000085		AC POWER CORD C-2504A (K1) Δ
Q902-903	TR30000327	TRANSISTOR 2SG536G-NP	CD00000115		AC POWER CORD C-3763-T (G) Δ
Q904	TR10000126	TRANSISTOR 2SA608K(F.G)	SP30000185		ACO MASK 4TTD-26 (H,E,K,G,D,Y1,Y2)
Q905	TR10000047	TRANSISTOR 2SB631K(E.F)	AA20000749		FRONT PANEL 2TQI-1#2 TFP-696
Q906	TR40000069	TRANSISTOR 2SD600K(E.F)	BU00001145		POWER RING 4TQF-13 14x14
Q907-908	TR30000327	TRANSISTOR 2SG536G-NP			
R501-504	RM81001612	RESISTOR MK2001KFECZ. METAL			
R505-506	RM84750619	RESISTOR MK2475RFECZ. METAL			
R507-508	RM81003610	RESISTOR MK2100KFECZ. METAL			
R509-510	RM84750619	RESISTOR MK2475RFECZ. METAL			
R511-512	RM82741615	RESISTOR MK22K74FECZ. METAL			
R513-514	RM81003610	RESISTOR MK2100KFECZ. METAL			
R515-516	RM81000619	RESISTOR MK2100RFECZ. METAL			
R517-518	RM82211614	RESISTOR MK22K21FECZ. METAL			
R519-520	RM81821615	RESISTOR MK21K82FECZ. METAL			
R521-522	RM82212618	RESISTOR MK222K1FECZ. METAL			
R523-524	RM81501610	RESISTOR MK201K5FECZ. METAL			
R525-526	RM81002616	RESISTOR MK2010KFECZ. METAL			
R527-528	RM81501610	RESISTOR MK201K5FECZ. METAL			
R529-530	RM84750619	RESISTOR MK2475RFECZ. METAL			

Parts List

SYMBOL	PARTS NO.	DESCRIPTION
	BU00001169	KNOB RING 4TQF-17 39F
	KB20002618	POWER BUTTON 4TQF-15 14x14
	OM10001260	ORNAMENTAL SIDE BOARD 4TR-2797#1 H=60mm
	DD40000095	LED SEL1124R
	OM70000065	PUSH BUTTON CONNECTOR 4TTL-15
	SN00000179	BUTTON SPRING 4TR-1988A#2 10F
	AU00001183	TOP COVER POLY 3TTE-6#3 H=60MM
	KB10001722	KNOB 4TQF-18 13F
	KB10001734	KNOB 4TQF-19 24F
	KB10001746	KNOB 4TQF-20 33F
	KB10001758	KNOB 4TQF-21 33F
	FE00000067	FELT 4TR-1083B#1 22F
	FE00000079	FELT 4TR-1083B#3 46F
	FE00000092	FELT 4TR-1083B#2 30F
	SR00000882	UPPER COVER SPACER 4TR-2418
	MN10003050	OWNER'S MANUAL RC-970BX
	PL00001087	STYROL SIDE MOULDING 2TTE-8B#2 TZ-164-1