

ROTEL *hifi*

STEREO COMPACT DISC PLAYER

RCD-945AX

TECHNICAL MANUAL

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Safety Caution

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

THIS SET EMPLOYS A LASER. THEREFORE, BE SURE TO FOLLOW CAREFULLY THE INSTRUCTIONS BELOW WHEN SERVICING.

WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

LASER WARNING LABEL

THE LABEL SHOWN BELOW ARE AFFIXED.

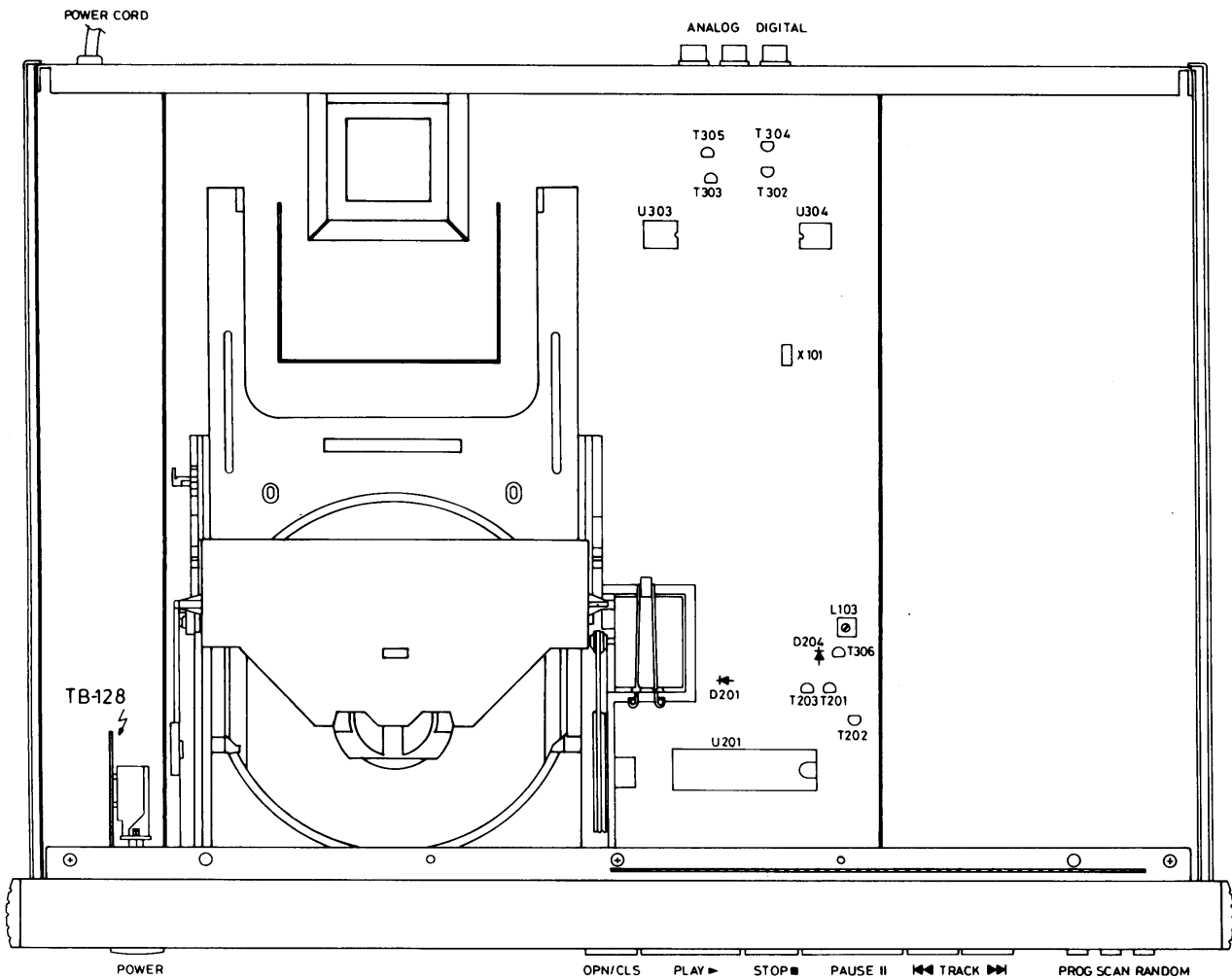
CAUTION

INVISIBLE LASER RADIATION WHEN OPEN, DO NOT STARE INTO BEAM.

DANGER

INVISIBLE LASER RADIATION WHEN OPEN, AVOID DIRECT EXPOSURE TO BEAM.

Chassis Layout



Specifications

DIGITAL

Laser type.....	Semiconductor 1 beam
Nominal Speed Range.....	200 - 600 rpm
Digital Filter.....	4 Fs two-stage FIR type
Total Oversampling.....	192 times
Noise Shaper.....	2nd order
D/A Converter.....	One-bit differential bitstream

AUDIO

Number of Channels.....	2
Frequency Range.....	20 to 20,000 Hz
Output Level.....	2.0 Vrms
Minimum Load Impedance.....	10 kohms
Amplitude Linearity.....	+/- 0.05 dB
Channel Balance.....	+/- 0.5 dB
Phase Linearity.....	+/- 0.5 degrees
Signal-to-Noise Ratio.....	100 dB
Dynamic Range.....	96 dB
Channel Separation.....	100 dB (1kHz)
THD + Noise.....	0.0025% (1kHz)
Intermodulation Distortion.....	0.0025% (1kHz)
Out-Band Rejection.....	>60 dB, above 24.1 kHz
Wow and Flutter.....	Quartz Crystal Precision

DIGITAL OUTPUT

Output Level.....	0.5 Vpp
Load Impedance.....	75 Ohms

GENERAL

AC (mains) Voltage.....	100 - 120 V / 60 Hz (depending on local requirements) 220 - 240 V / 50 Hz (depending on local requirements)
Power Consumption.....	30 watts
Main Cabinet Material and Finishing.....	Metal sheet, anti-corrosion plated and painted
Front Panel Material and Finishing.....	Anodized aluminum, hairline brushed
Overall Dimensions.....	440(W) x 92 (H) x 316 (D) mm 17-3/8" (W) x 3-5/8" (H) x 12-7/16"
Net Weight.....	5.8 kg / 12.76 lbs

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

Alignment

ALIGNMENT PROCEDURE FOR THE LASER CURRENT AND THE FOCUS OFFSET (RCD-945AX).

1. Preparation

- 1.1. The disc must be a SONY type 4 (YEDS 18).

2. Prealignment

- 2.1. Turn the laser variable resistor R123 fully counterclockwise, and then returned in clockwise direction about 1/2 of a circle (180 degrees).
- 2.2. Turn the focus variable resistor R142 in the middle position.

3. Alignment Procedure

- 3.1. Switch the power on and verify if the display light up.
- 3.2. Place the test disc in the tray. the test disc must be clean (no finger prints) and may not be damaged.
- 3.3. Connect a DC voltmeter to the R112 position, and adjust the laser current reading with the laser variable resistor R123 at 50 \pm 2mV.
- 3.4. Connect a DC voltmeter to the C135 position, and adjust the focus offset reading with the variable resistor R142 at a average middle value of 400 \pm 40mV.

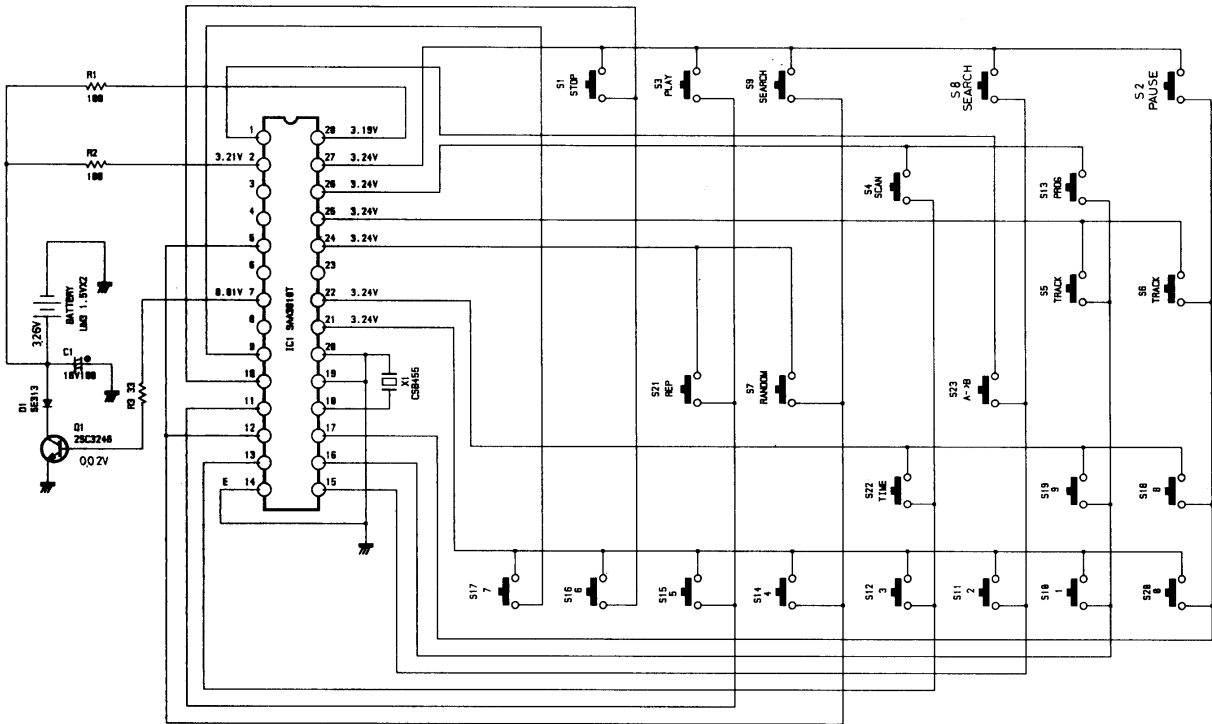
Remark : It is normal that focus readout is not stable, but is varying within certain range.

Note :

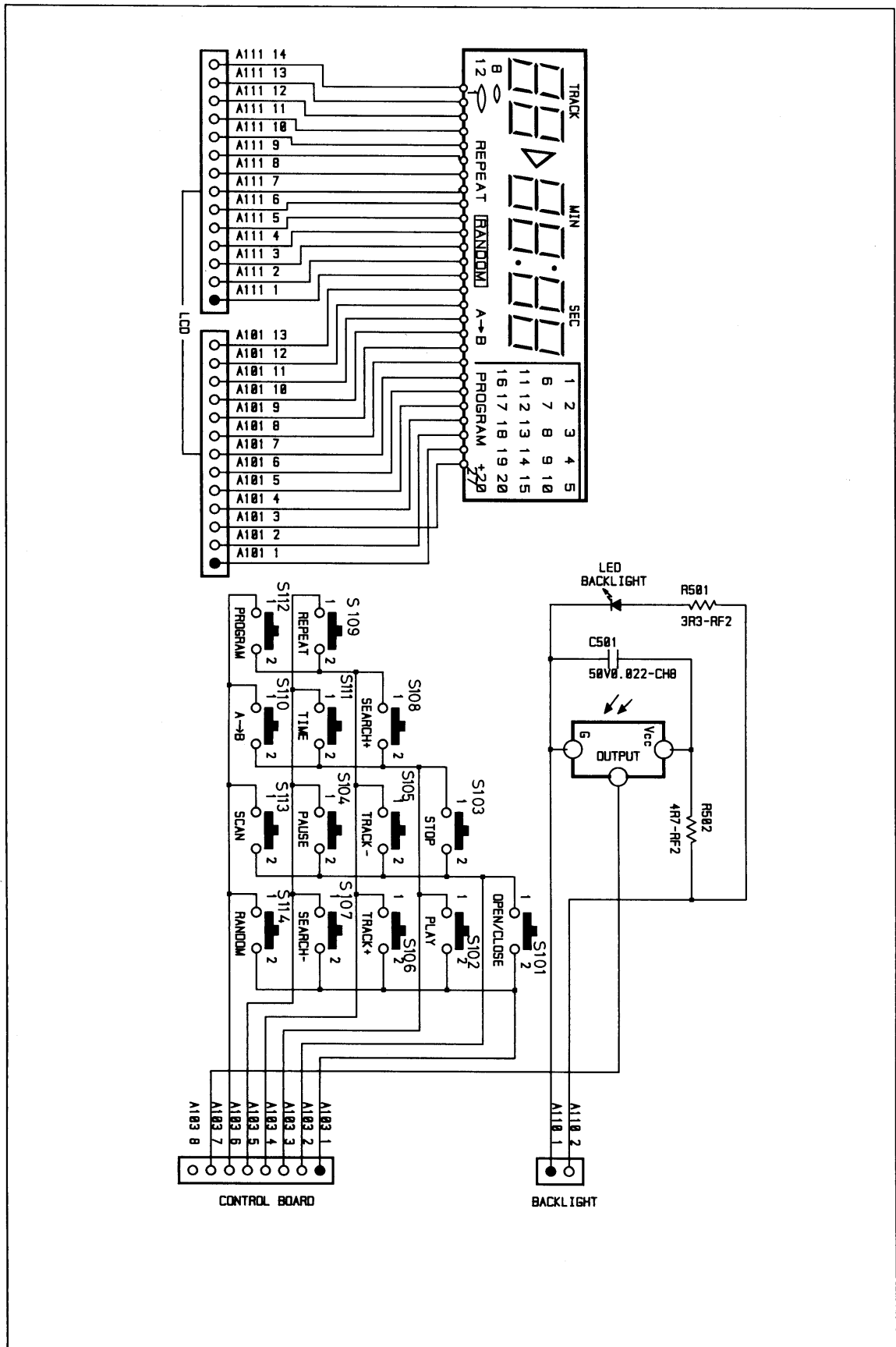
- a. The alignment must be done only if the monoboard, or the CDM is replaced for service purpose.
- b. The given measurement data are only for alignment after service. When checking CD player for these data, different values can found. This is normal and gives no reason for malfunction.

REMOTE CONTROL HANDSET

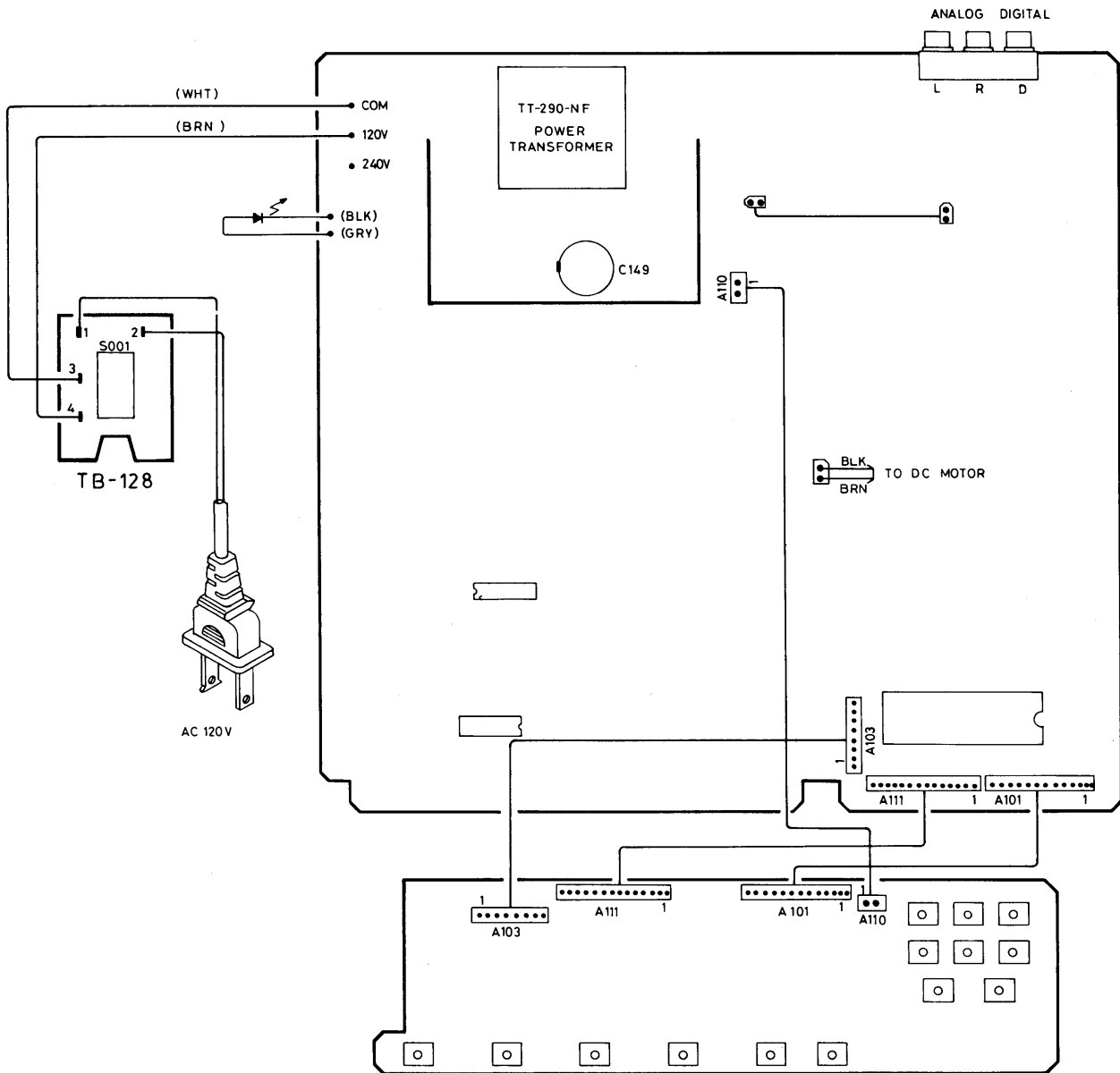
SCHEMATIC DIAGRAM MODEL RR-903



Schematic Diagram

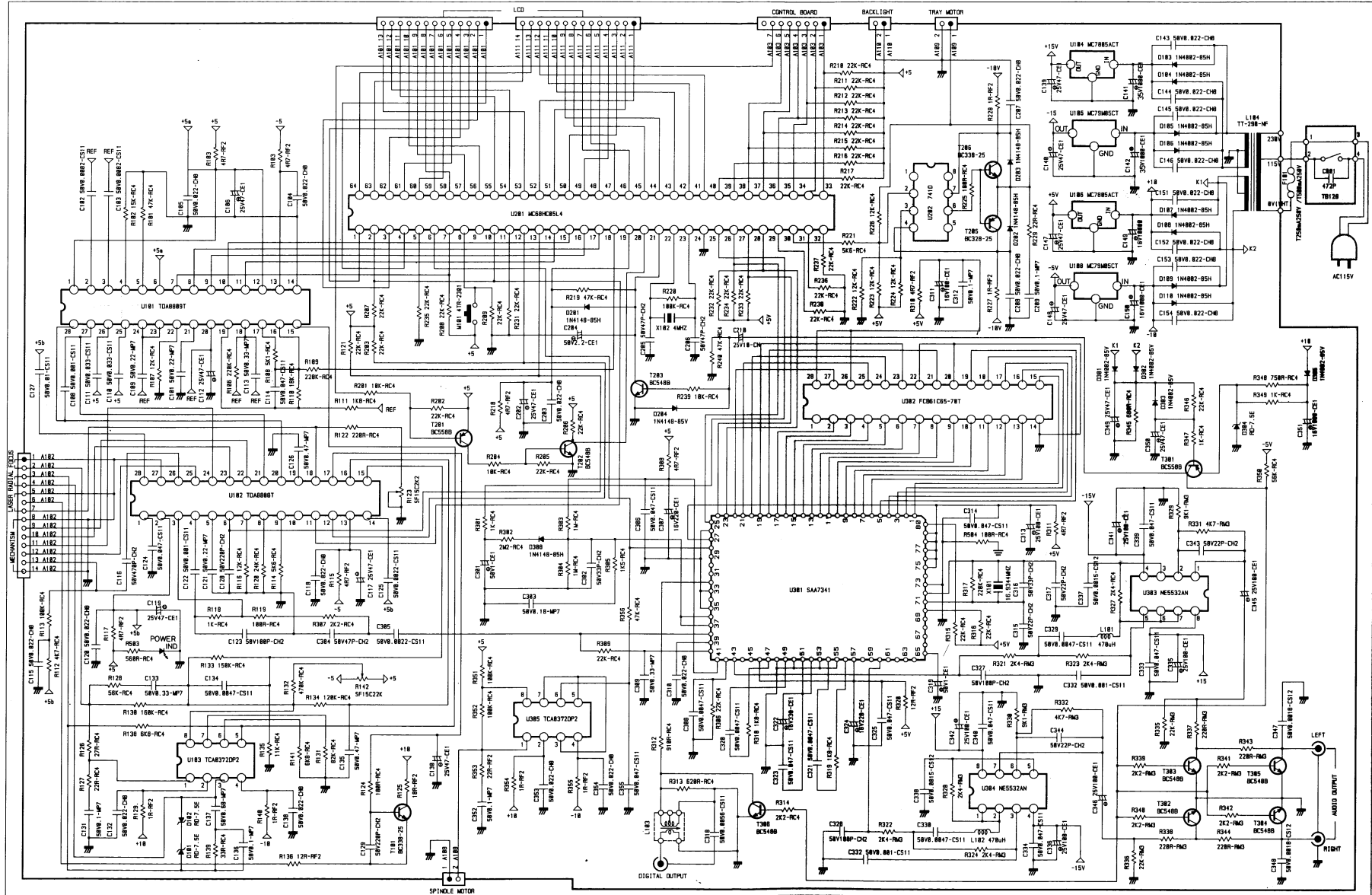


Wiring Diagram

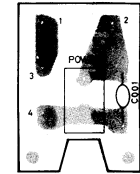
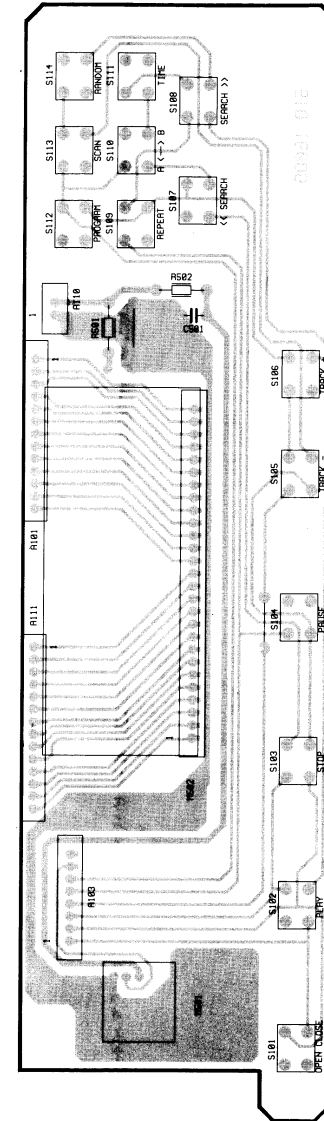
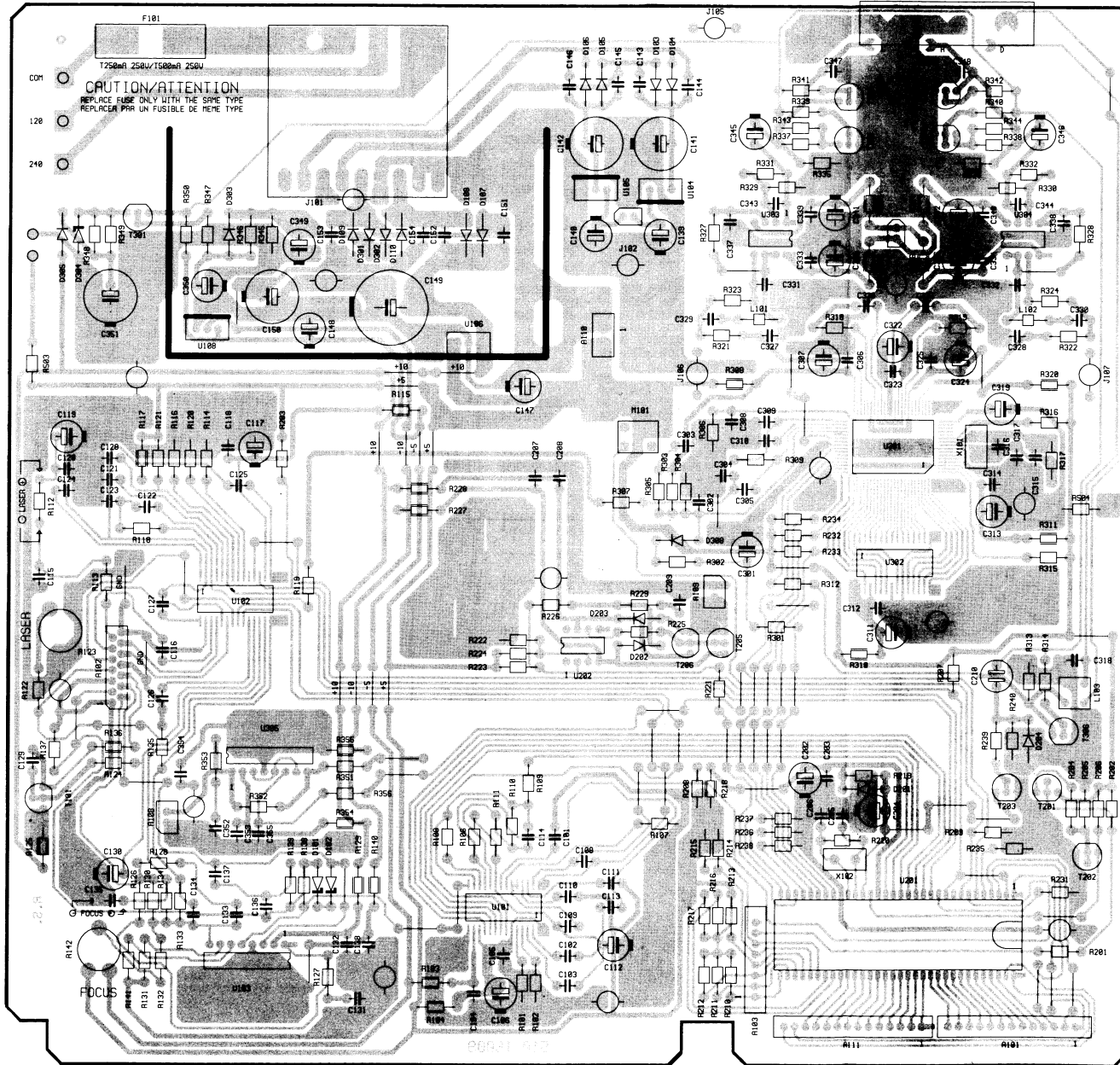


Schematic Diagram

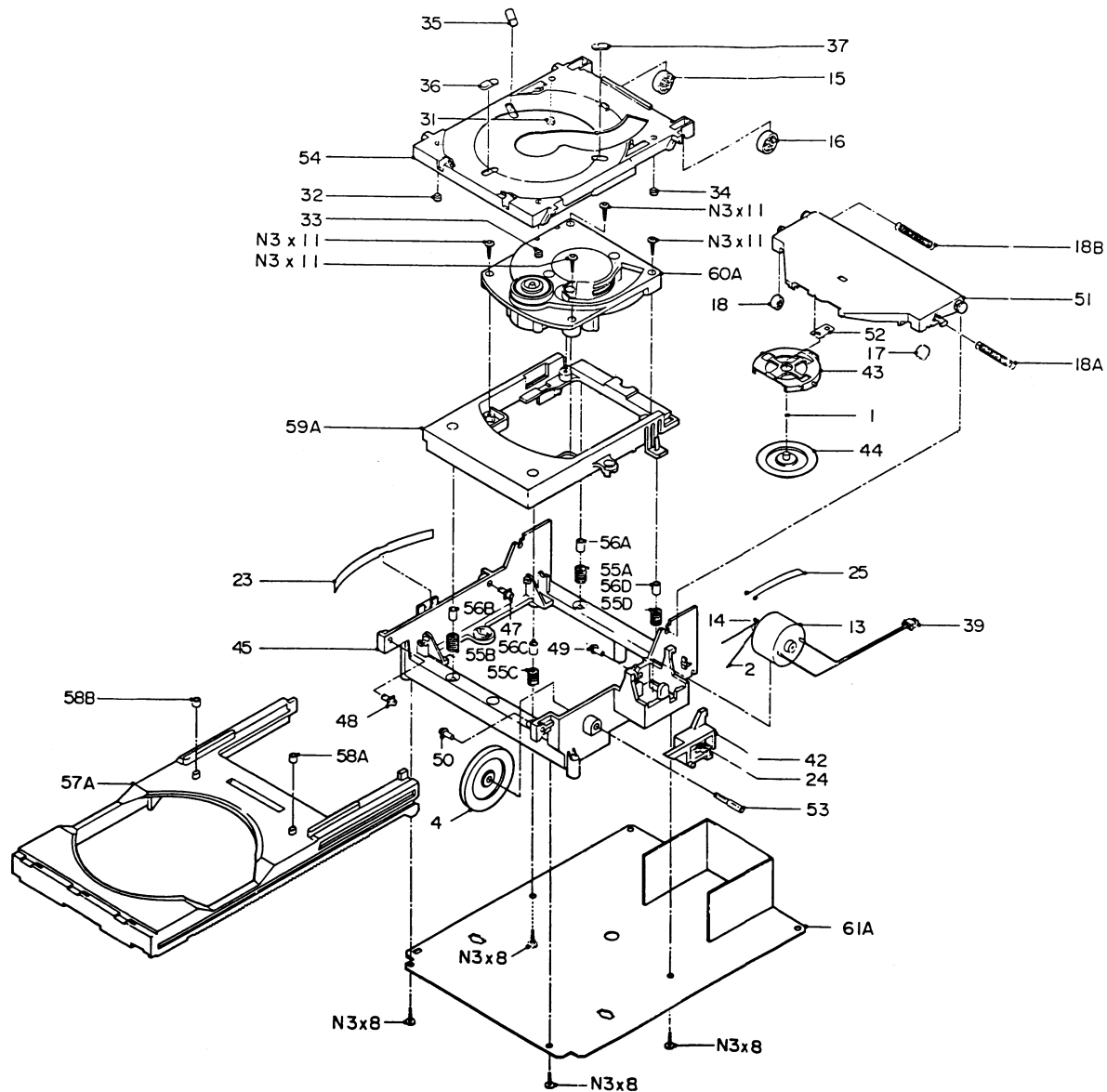
SCHEMATIC DIAGRAM MODEL NO. RCD-945AX



Printed Circuit Boards



Disassembly Diagram



ITEM	PART NO.	DESCRIPTION
1	013 40001	BALL 3F
2	017 40002	BELT
4	077 30005	GEAR WHEEL
13	118 40001	DC MOTOR
14	139 40003	PULLY (MOTOR)
15, 16	151 40001	ROLLER
17, 18	151 40002	ROLLER
23	172 30015	FLAT SPRING
24	172 40013	COMPRESSION SPRING
25	172 40014	SPRING
31, 32	208 40014	TULE
33, 34	208 40001	TULE
35-37	208 40002	ORNAMENTAL TULE
39	241 40003	LEAD ASS'Y
42	255 30003	SWITCH BRACKET
43	258 20004	CENTRING RING
44	258 30003A	CARRIER
45	259 10002	CHASSIS
47, 48	271 30003	GUIDE
49, 50	271 30004	GUIDE
51	300 10004A	LID
52	300 40005	PIVOT PLATE
53	316 40005	SHAFT
54	317 10003A	LIFT PLATE
18A, 18B	172 40018	TENSION SPRING
55A, 55B		
55C, 55D	172 40016	COMPRESSION SPRING
56A, 56B		
56C, 56D	078 40002	SUSPENSION GROMMET
58A, 58B	078 40003	DAMPING GROMMET
57A	317 10004	TRAY ASS'Y
59A	259 10003A	SUPPORT PIECE
60A	480 32403	CDM4 MINI (DC) ACCESSORY
N3x11	160 40002	PLAST SCR M3x8

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
510-16009 PCB ASSEMBLY					
U101	IC00002879	IC TDA8809T/C2	SB00000807	P.V.C SHIELD PLATE (B)	
U102	IC00002867	IC TDA8808T/C3	4TQR-8		
U103	IC00002806	IC TCA0372/DP2	CD00000218	AC CORD SPT-2 AWG#18	
U104	IC00001267	IC NJM78M15	4TR-670#4(U,C,A,J) Δ		
U105	IC00001565	IC NJM79M15	CD00000292	AC POWER CORD UP-401F	
			4TR-2631#1 (D) Δ		
U106	IC00002776	IC NJM7805K	CD00000048	AC POWER CORD 4TR-1037	
U108	IC00002788	IC NJM79M05A	(H,E,K2,Y) Δ		
U201	IC00002922	IC LXC413839B	CD00000085	AC POWER CORD C-2504A	
U202	IC00002910	IC NJM741D	(K1) Δ		
U301	IC00002934	IC SAA7341GP	CD00000115	AC POWER CORD C-3763-T	
			(G) Δ		
U302	IC00002946	IC FCB61C65-70T	NP00001949	NAME STICKER 4TR-2828A#1	
U303	IC00001693	IC NE5532AN	TNP-382 AC120V		
U304	IC00001693	IC NE5532AN	NP00001974	NAME STICKER 4TR-2828A#4	
U305	IC00002806	IC TCA0372/DP2	TNP-385 AC120V (C)		
D101, 102	DD20000272	ZENER DIODE RD-7.5E	NP00001962	NAME STICKER 4TR-2828A#3	
			TNP-384 AC240V		
D103, 104	DD10000329	DIODE IN4002	NP00001998	NAME STICKER 4TR-2828A#5	
D105, 106	DD10000329	DIODE IN4002	TNP-389 AC230V		
D107, 108	DD10000329	DIODE IN4002	NP00002012	NAME STICKER 4TR-2828A#6	
D109, 110	DD10000329	DIODE IN4002	TNP-391 AC100V		
D201	DD10000100	DIODE IN4148-85	NP00001950	NAME STICKER 4TR-2828A#2	
			TNP-383 AC220V		
D202	DD10000100	DIODE IN4148-85	SC00000039	AC CORD STOPPER SR-6W-1 Δ	
D203	DD10000100	DIODE IN4148-85	SC00000027	AC CORD STOPPER SR-4N-4 Δ	
D204	DD10000100	DIODE IN4148-85			
D301, 302	DD10000329	DIODE IN4002	AA50000090	FRONT PANEL 2TQR-1 TFP-669	
D303	DD10000329	DIODE IN4002	AW00000587	PANEL WINDOW 4TQO-7	
			BU00001145	POWER RING W/LED 4TQF-13	
D304	DD20000272	ZENER DIODE RD-7.5E	KB20002681	POWER BUTTON 4TQF-15	
D305	DD10000329	DIODE IN4002	KB20002711	TACT BUTTON 6 KEY 3TQO-8	
D308	DD10000100	DIODE IN4148-85			
T201	TR70000110	TRANSISTOR C558B	KB20002784	TACT BUTTON 2 KEY 3TQO-4	
T202	TR70000091	TRANSISTOR C548B	KB20002796	TACT BUTTON 3 KEY 3TQP-2	
T203	TR70000091	TRANSISTOR C548B	OM10001272	ORNAMENTAL SIDE BOARD	
T205	TR70000042	TRANSISTOR C328-25	4TR-2797#2		
T206	TR70000066	TRANSISTOR C-338-25	OM10001387	CD ALUM. DOOR 4TQO-6#1	
T301	TR70000110	TRANSISTOR C558B	OM10001399	CD PLASTIC DOOR 3TQO-5	
T302, 303	TR70000091	TRANSISTOR C548B	DD40000095	L.E.D SEL1124R	
T304, 305	TR70000091	TRANSISTOR C548B	OM70000065	PUSH BUTTON CONNECTOR	
T306	TR70000091	TRANSISTOR C548B	4TTL-15		
X101	DD60000362	CRYSTAL OSC. 16.9344MHZ	OM70000193	FILTER BOARD 4TSJ-9#3	
X102	DD60000350	CERAMIC RES. 4.00MHZ	OM70000284	PVC FILTER BOARD 4TQR-5	
J101	PT29010100	ROWER TRANSFORMER	SN00000179	BUTTON SPRING 4TR-1988A#2	
		TT-290-NF Δ	10F		
L103	LC23770001	DIG OUT TRANSFORMER TRL-377	AG00000275	REMOTE HANDSET RR-903	
F101	FU23000384	FUSE T250mA 250V Δ	AU00001316	TOP COVER POLY 3TTF-5#9	
	FU25000016	FUSE T500mA 250V Δ U,C,A	OM10001510	FL ORNAMENTAL PLATE 4TQR-6	
L101, 102	LM00000530	MICRO INDUCTOR TRL-378	SRO0000882	UPPER COVER SPACER 4TR-2418	
S101-114	SH60000240	KEY BOARD SW 4TR-2343	SRO0000961	RUBBER CAP 4TTV-8	
M501	TR70000042	TRANSISTOR SBX1610-52	MN10002926	OWNER'S MANUAL RCD-945AX	
M502	DD40001270	LCD BACKLIGHTING CSB-944G	PLO0001130	S'YROL SIDE MOULDING 2TQR-4	
	DD40001269	LCD DISPLAY DT-170P-A	TZ-186		
TB-128-A PCB ASSEMBLY					
C001	CK00000035	SPARK KILLER DE7150F472M Δ			
S001	SH40000120	POWER SWITCHED C-3600B-T Δ			
OTHERS					
AF50000030		FRONT CHASSIS 2TQO-2B			
AM00002025		CHASSIS BODY 2TQR-2			
AR50000083		PRINTED REAR CHASSIS			
		TRP-612			
DI00001260		COMPACT DISC MONOKIT			
		SQ-400B			
FD00000021		FUSE CLIP C-1923-T			
FT00000229		PLASTIC FOOT 4TSH-19#2			
		50Fx14H			
SB00000765		P.V.C SHIELD PLATE (A)			
		4TQR-7			