

ROTEL *hifi*

STEREO COMPACT DISC PLAYER

RCD-955AX

TECHNICAL MANUAL

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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

MN20001962

DEC 12 1991

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.

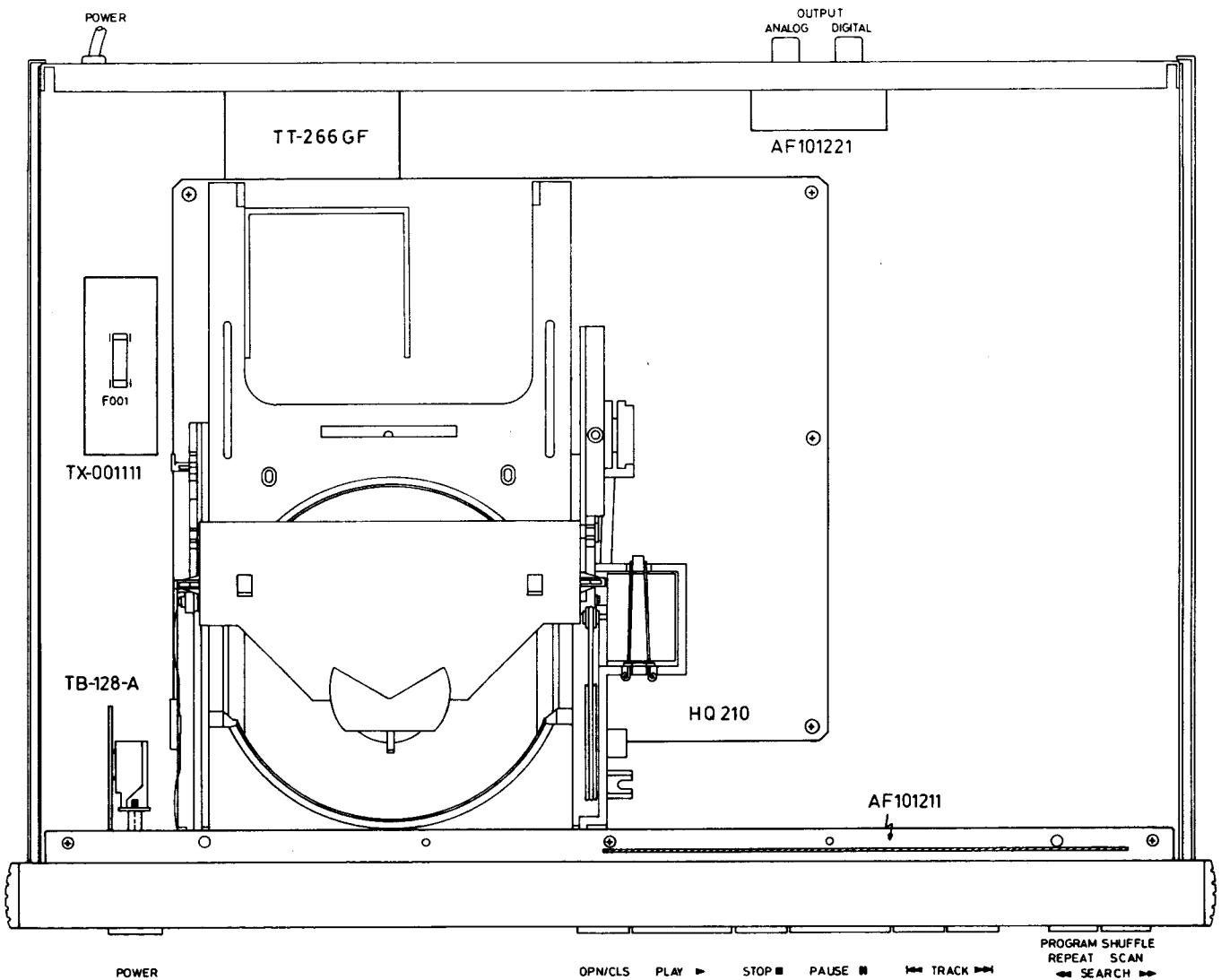
CAUTION

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

DANGER

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

Chassis Layout



Specifications RCD-955AX

AUDIO

Number of Channels.....2
Frequency Range.....20 to 20,000 Hz
Amplitude Linearity..... +/- 0.05 dB
Channel Unbalance..... +/- 0.5 dB
Phase Linearity..... +/- 0.5 degrees
Signal-to-Noise Ratio.....100 dB
Dynamic Range.....96 dB
Channel Separation.....100 dB (1 kHz)
THD + Noise.....0.0025 % (1 kHz)
Intermodulation Distortion...0.0025 % (1 kHz)
Out-Band Rejection..... > 60 dB, above 24.1 kHz
Wow and Flutter.....Quartz crystal precision
Max Output Level.....2 V rms
Output Impedance.....200 ohms
Min Load Impedance.....10 kohms

DIGITAL OUTPUT

Output Level.....0.5 V P.P.
Load Impedance.....75 ohms

MISCELLANEOUS

Power Requirement.....120 V/ 60 Hz, 220 V/ 50 Hz,
240 V/ 50 Hz (depending on destinations)
Power Consumption.....30 watts
Dimension (overall).....440 (W) x 92 (H) x 316 (D) mm
17-3/8" x 3-5/8" x 12-7/16"
Weight (net).....5.8 Kg / 12.76 lbs

- Specifications and design subject to possible modification without notice.

Alignment

ALIGNMENT PROCEDURE FOR THE LASER CURRENT AND THE FOCUS OFFSET (RCD-955AX)

NOTE 1. This alignment must be done only if or the monoboard or the CDM is replaced for service purpose.

NOTE 2. The given measurement date are only for alignment after service. When checking monokits for these date, different values can be found. This is normal and gives no reason for malfunction.

NOTE 3. The used test disc must be a SONY type 4 (YEDS 18).

A. Turn used laser variable resistor R108 in a position that the total resistance of R108 plus R109 is 1 kohm.

Turn the focus variable resistor R129 in the middle position.

B. Switch the power ON and verify that the display light up.

C. Place the test disc in the tray. The test disc must be clean (no finger prints) and may not be damaged.

D. Connect a DC voltmeter over resistor R101, switch the power on, press the PLAY button and check the reading of the DC voltmeter.

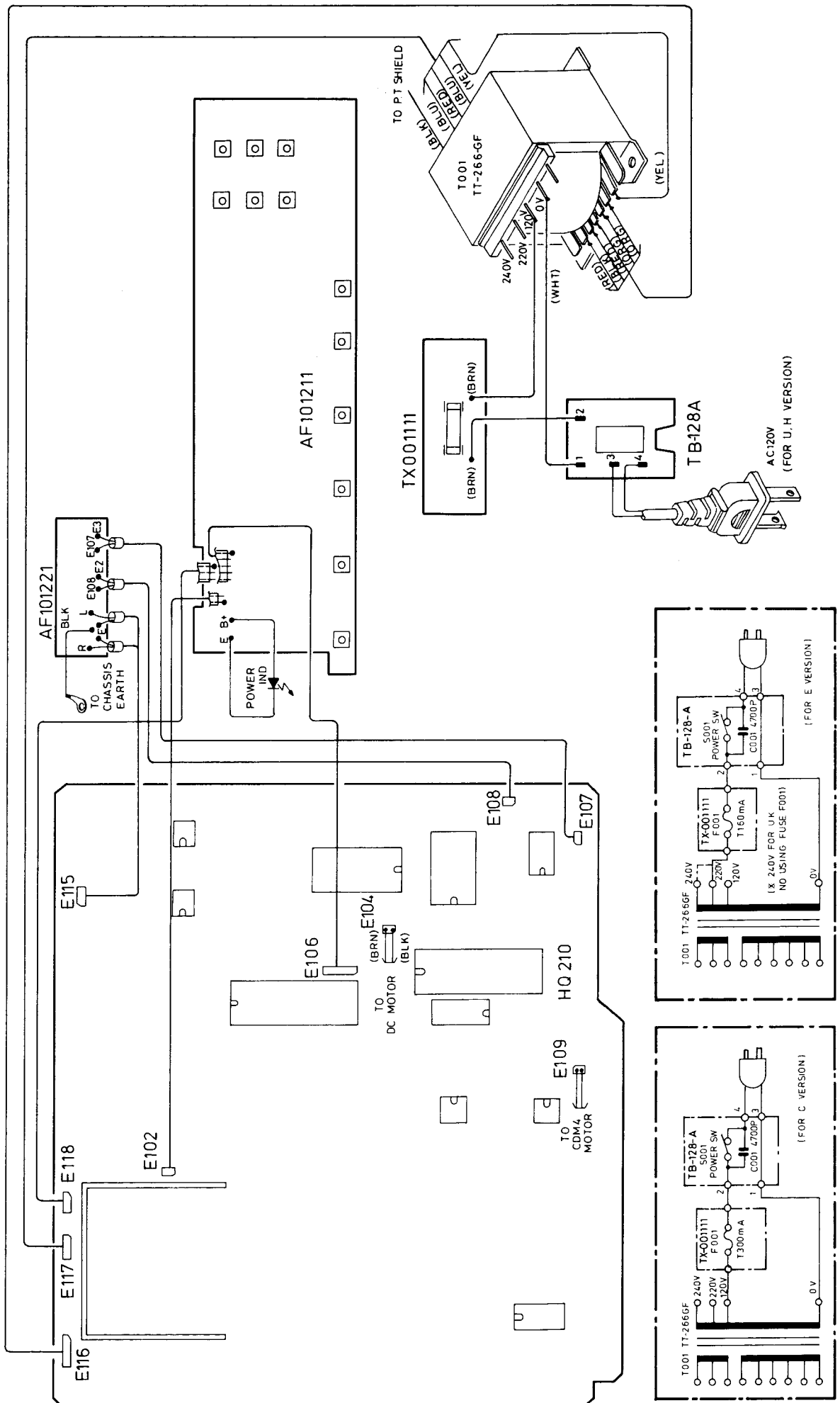
E. While the monokit is playing, adjust the laser current with variable resistor R108 at a value of 50 mV +/- 2 mV.

F. Switch the power off and connect a DC voltmeter over capacitor C133, switch the power on, press the PLAY button and check the reading of the DC voltmeter.

G. While the monokit is playing, adjust the focus offset with variable resistor R129 at a value of 400 mV +/- 20 mV.

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

Wiring Diagram



Parts List

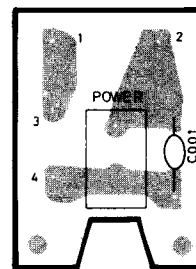
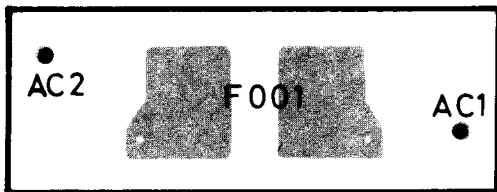
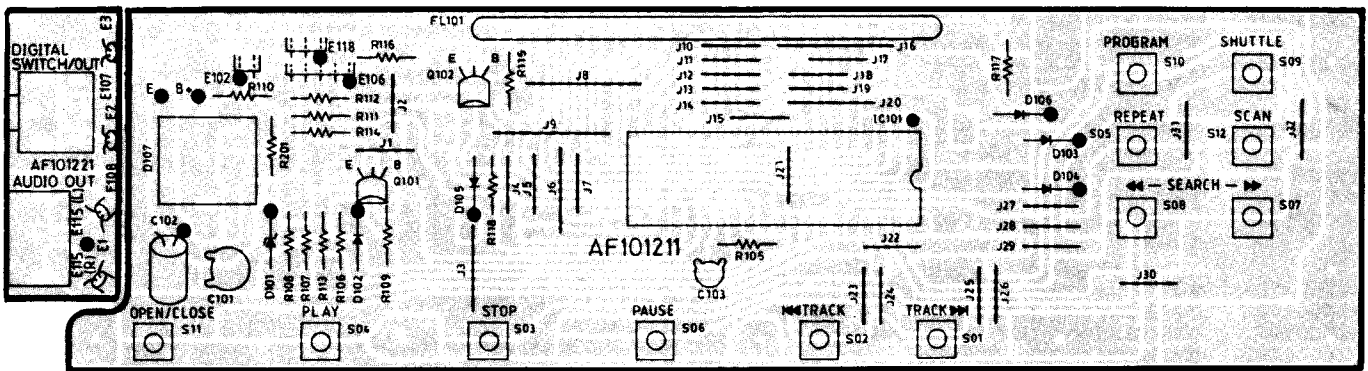
NOTE: THE COMPONENTS IDENTIFIED BY Δ MARK ARE FOR SAFETY. REPLACE ONLY WITH ORIGINAL PARTS. DO NOT SUBSTITUTE.

SYMBOL	PARTS NO.	DESCRIPTION	SYMBOL	PARTS NO.	DESCRIPTION
AF101211 PCB ASSEMBLY			T108	201 40007	TRANS BC548
R105	RD21503826	R,CARBON 150K 1/4W J	T109,110	201 40008	TRANS BC558
R106	RD24701829	R,CARBON 4.7K 1/4W J	T111	201 40007	TRANS BC548
R107,108	RD21001821	R,CARBON 1K 1/4W J	T112	201 40010	TRANS BC328
R109	RD24701829	R,CARBON 4.7K 1/4W J	T113	201 40009	TRANS BC338
R110	RD24700825	R,CARBON 470 1/4W J	T114	201 40010	TRANS BC328
			T115	201 40009	TRANS BC338
R111,112	RD22202822	R,CARBON 22K 1/4W J	T116	201 40007	TRANS BC548
R113	RD24702822	R,CARBON 47K 1/4W J	T117	201 40013	TRANS BC338-40
R114	RD21002825	R,CARBON 10K 1/4W J	T118	201 40009	TRANS BC338
R115	RD24701829	R,CARBON 4.7K 1/4W J	T401	201 40101	TRANS MPF4859A
R116,117	RD23308826	R,CARBON 3.3 1/4W J	T402	201 40101	TRANS MPF4859A
R118	RD22202822	R,CARBON 22K 1/4W J	T403	201 40013	TRANS BC338-40
R201	RD24702822	R,CARBON 47K 1/4W J	T404	201 40013	TRANS BC338-40
C101	CC02009456	CAP.CERAMIC 0.02uF 50V	T405	201 40013	TRANS BC338-40
C102	CE02206508	CAP.ELEC. 22uF 50V	T406	201 40013	TRANS BC338-40
C103	CC02011430	CAP.CERAMIC 200P 50V	T501	201 40002	TRANS BC558B
D101	DD20000193	DIODE RD-15E	T701	201 40004	TRANS BC328-16
D102-106	DD80000021	DIODE IN4148-86	T702	201 40009	TRANS BC338
D107	IC00002030	REMOTE RECEIVER SBX1610-02	T801	201 40016	TRANS BD135
Q101,102	TR30000327	TRANSISTOR 2SC536	T802	201 40002	TRANS BC558B
IC101	IC00002272	IC TMS3763	T803	201 40001	TRANS BC548B
FL101	DD40001040	FL TUBE 6-MT-119G	T804	201 40001	TRANS BC548B
S01-S12	SH60000240	KEY BOARD SW 4TR-2343	U101	088 44010	IC TDA8808T/C3
			U102	088 44011	IC TDA8809T/C2
			U103	088 43048	IC TCA0372 DP2
			U104	088 43038	IC NJM4560D
			U105	088 43038	IC NJM4560D
			U106	088 43005	IC SAA7210P/04
			U107	088 41002	IC UPD41416C-20
			U108	088 44007	IC SAA7220P/B
			U109	088 44003	IC MC68HC05C8/P105
			U110	088 42002	IC 74HCT08P
			U301	088 44008	IC TDA154A/N2 DUAL DAC.
			U401	088 44006	IC OPAMP NE5532AN
			U402	088 44006	IC OPAMP NE5532AN
			U601	088 43022	IC VOL REG 78M12CT
			U701	088 43023	IC VOL REG 78M15CT
			U702	088 43035	IC VOL REG 79M15CT
			U703	088 43012	IC VOL REG 7805CT (5V2)
			U704	088 43033	IC VOL REG 79M05CT
			X101	052 42002	QUARTZ CRYSTAL 11.2896 MHZ
			X102	148 40002	CER RESONATOR 4.0000 MHZ
AF101221 PCB ASSEMBLY			OTHERS		
JP01000115	1P PIN JACK 4TR-2487#3		AF50000030	FRONT CHASSIS 2TQ0-2	
JP02000211	2P PIN JACK 4TR-2166#4		AM00001940	PAINRED CHASSIS BODY 2TQ0-3#1	
			AR50000060	PRINTED REAR CHASSIS TRP-594	
			DI00000103	COMPACT DISC MONOKIT HQ210	
			PT26607105	POWER TRANSFORMER TT-266-GF Δ	
			FT00000229	PLASTIC FOOT 4TSH-19#2 50F \times 14H	
			SP40000693	P.T PLASTIC PLATE 4TR-2701	
			CD00000216	AC CORD SPT-2 AWG#18 4TR-670#4 (U,C,A) Δ	
			CD00000292	AC POWER CORD UP-401F 4TR-2631#1 (D) Δ	
			CD00000048	AC POWER CORD 4TR-1037 (H,E,K2) Δ	
			CD00000115	AC POWER CORD C-3763-T (G) Δ	
			NP00001949	NAME STICKER AC 120V 4TR-2828#1 TNP-382	
			NP00001962	NAME STICKER AC 240V 4TR-2828#3 TNP-384	
TX001111 PCB ASSEMBLY					
F001	FU23000281	FUSE 250V T160MA S Δ			
	FU25000065	FUSE 250V 300MA UL/CSA Δ			
TB-128A PCB ASSEMBLY					
S001	SH40000120	POWER SW C-3600B-T Δ			
C001	CK00000035	SPARK KILLER DE7150F472M Δ			
CD MONOKIT HQ210 PCB					
D101,102	058 40009	ZENERDIODE HZ7C2 (7V5)			
D103	058 40010	DIODE BAT85			
D104	058 40011	DIODE BA314			
D105,106	058 40012	ZENERDIODE HZ3B2 (3V0)			
D107	058 40011	DIODE BA314			
D112-114	058 40002	DIODE IN4148			
D601	058 40013	ZENERDIODE HZ15-3 (15V)			
D602	058 40004	DIODE IN4002			
D603	058 40022	ZENERDIODE HZ6C2 (6V2)			
D701-705	058 40004	DIODE IN4002			
D706	058 40006	ZENERDIODE HZ5B1 (4V7)			
D707-710	058 40004	DIODE IN4002			
D801	058 40014	ZENERDIODE HZ4B3 (3V9)			
D802	058 40002	DIODE IN4148			
D803	058 40004	DIODE IN4002			
D804,805	058 40002	DIODE IN4148			
D806	058 40004	DIODE IN4002			
I101	089 31479	COIL LAL04 4.7MUH PM10			
I102	198 40001	DIG OUT TRANSFORMER			
I401,402	089 31471	COIL LAL04 470MUH PM10			
M105	081 40003	HEAT SINK			
M107	179 40001	TACT SWITCH (4.3MM)			
T101	201 40009	TRANS BC338			
T102	201 40012	TRANS BC338-25			
T103	201 40011	TRANS BC328-25			
T104	201 40006	TRANS BF450			
T106	201 40008	TRANS BC558			
T107	201 40007	TRANS BC548			

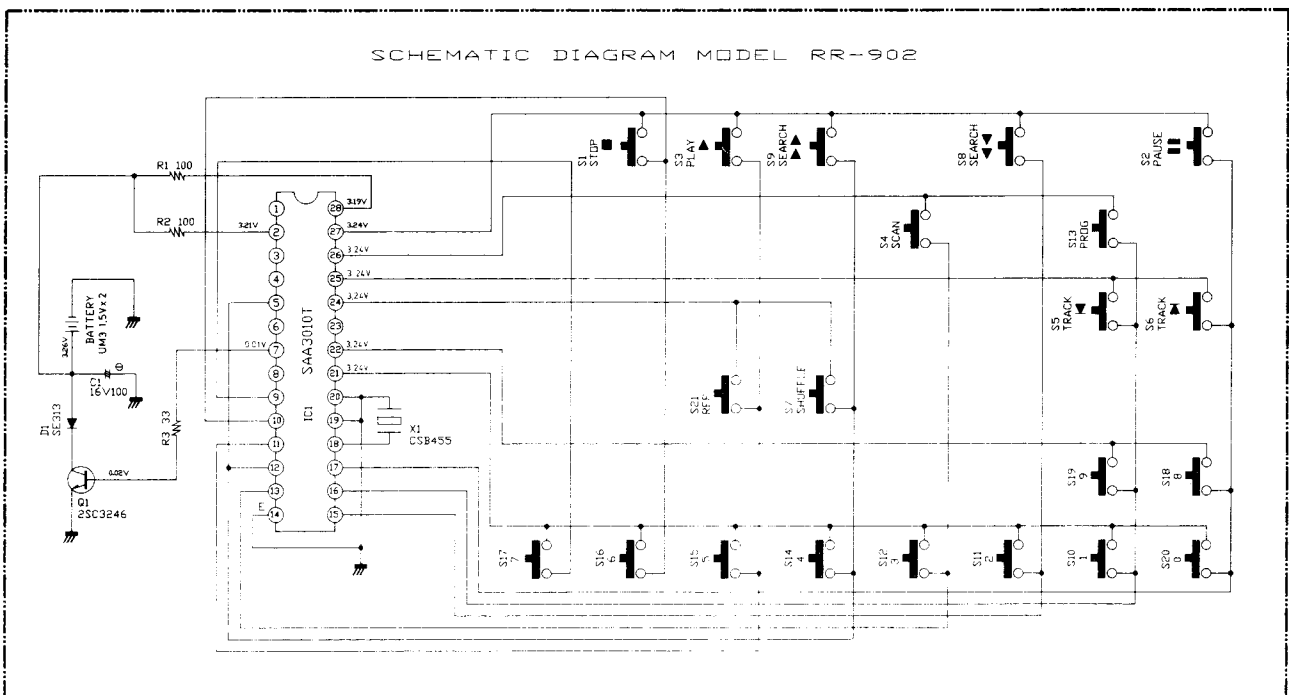
Parts List

SYMBOL	PARTS NO.	DESCRIPTION
NP00001974	NAME STICKER AC 120V-C 4TR-2828#4 TNP-385	
NP00001950	NAME STICKER AC 220V 4TR-2828#2 TNP-383	
NP00001998	NAME STICKER AC 230V 4TR-2828#5 TNP-389	
AA50000065	FRONT PANEL 2TQO-1 TFP-644	
AW00000587	PANEL WINDOW 4TQO-7	
BU00001145	POWER RING W/LED 4TQF-13 14x14	
KB20002711	TACT BUTTON 6 KEY 3TQK-8	
KB20002784	TACT BUTTON 2 KEY 3TQO-4	
OM10001272	ORNAMENTAL SIDE 4TR-2797#2	
OM10001387	CD ALUM. DOOR 4TQO-6	
OM10001399	CD PLASTIC DOOR 3TQO-5	
KB20002681	POWER BUTTON 4TQF-15 14x14	
OM70000065	PUSH BUTTON CONNECTOR 4TTL-15	
OM70000168	FILTER BOARD 4TSJ-9#2 83x32x2T	
OM70000193	FILTER BOARD 4TSJ-9#3 22x14x2T	
AU00001262	TOP COVER 3TTF-5#8	
OM10001405	FL ORNAMENTAL PLATE 4TQO-8#1 TFP-645	
DD40000095	L.E.D SEL1124R	
SR00000882	UPPER COVER SPACER 4TR-2418	
MN10002859	OWNER'S MANUAL	
PLO0001099	STYROL SIDE MOULDING 2TTF-9A#2 TZ-165-1	
TN10003835	INSIDE CARTON 4TR-2854#1	

Printed Circuit Boards

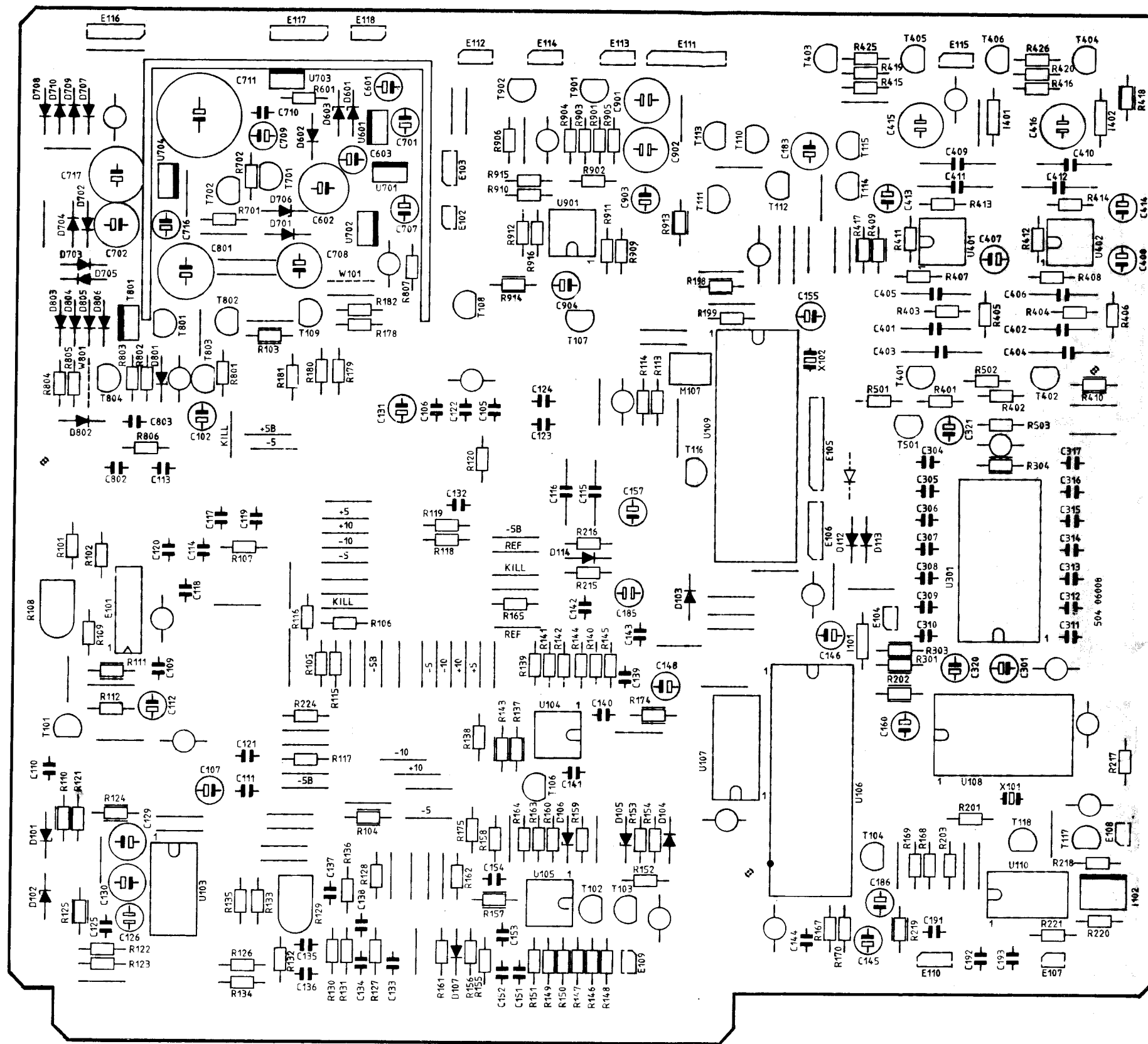


REMOTE CONTROL HANDSET



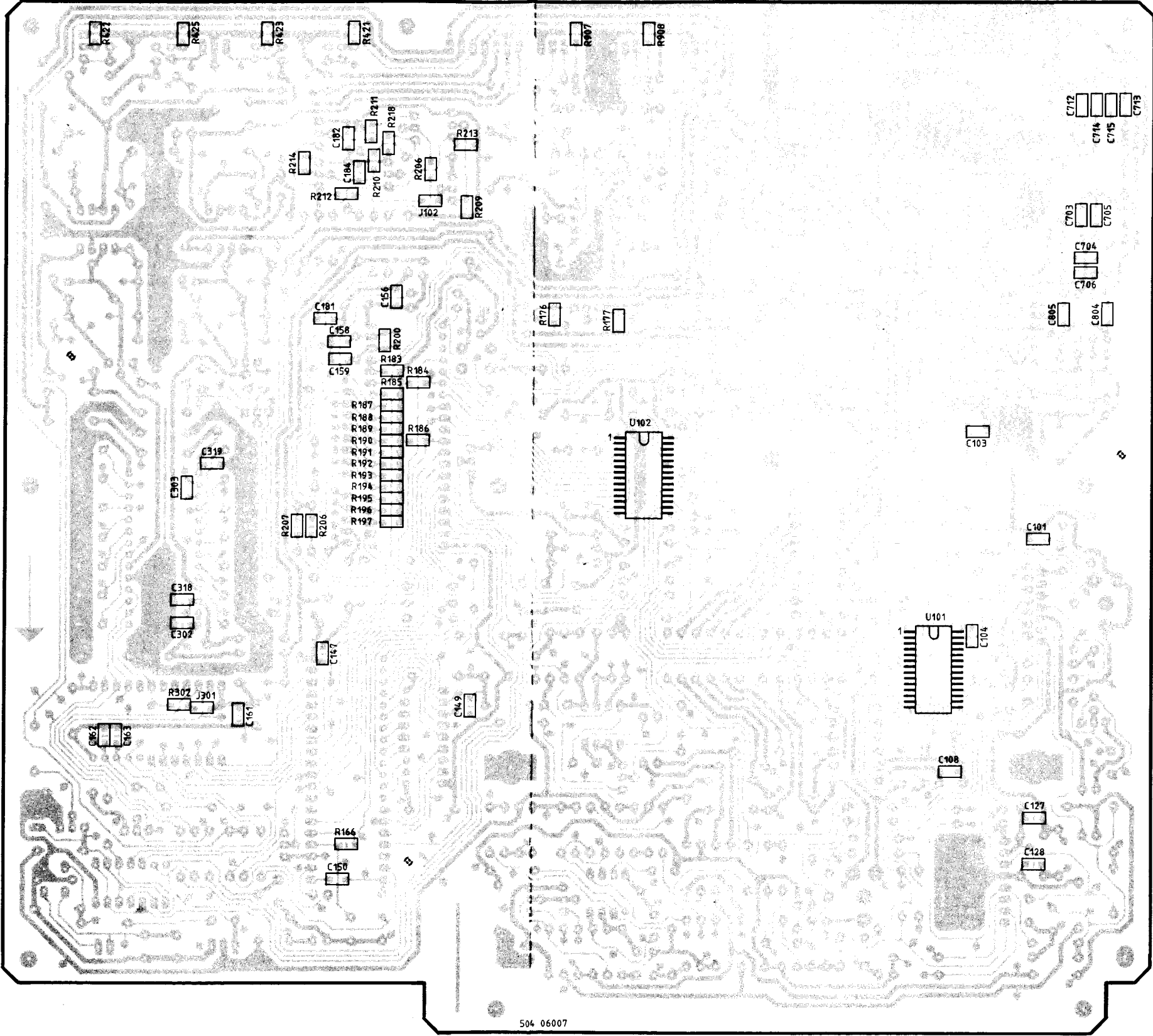
Printed Circuit Boards

(HQ 210 TOP SIDE)



Printed Circuit Boards

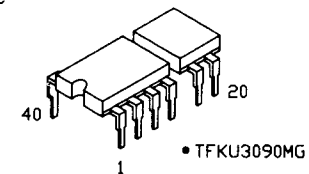
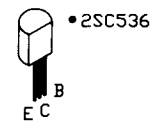
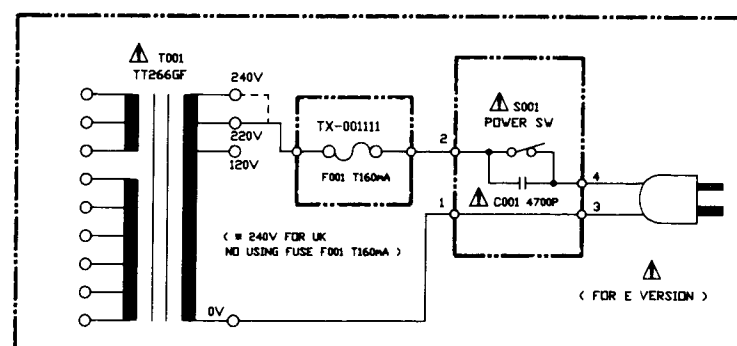
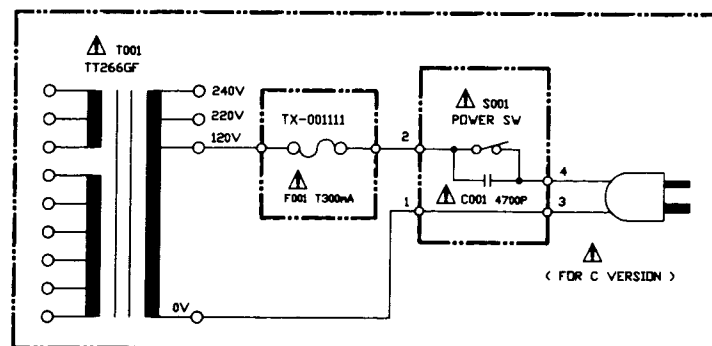
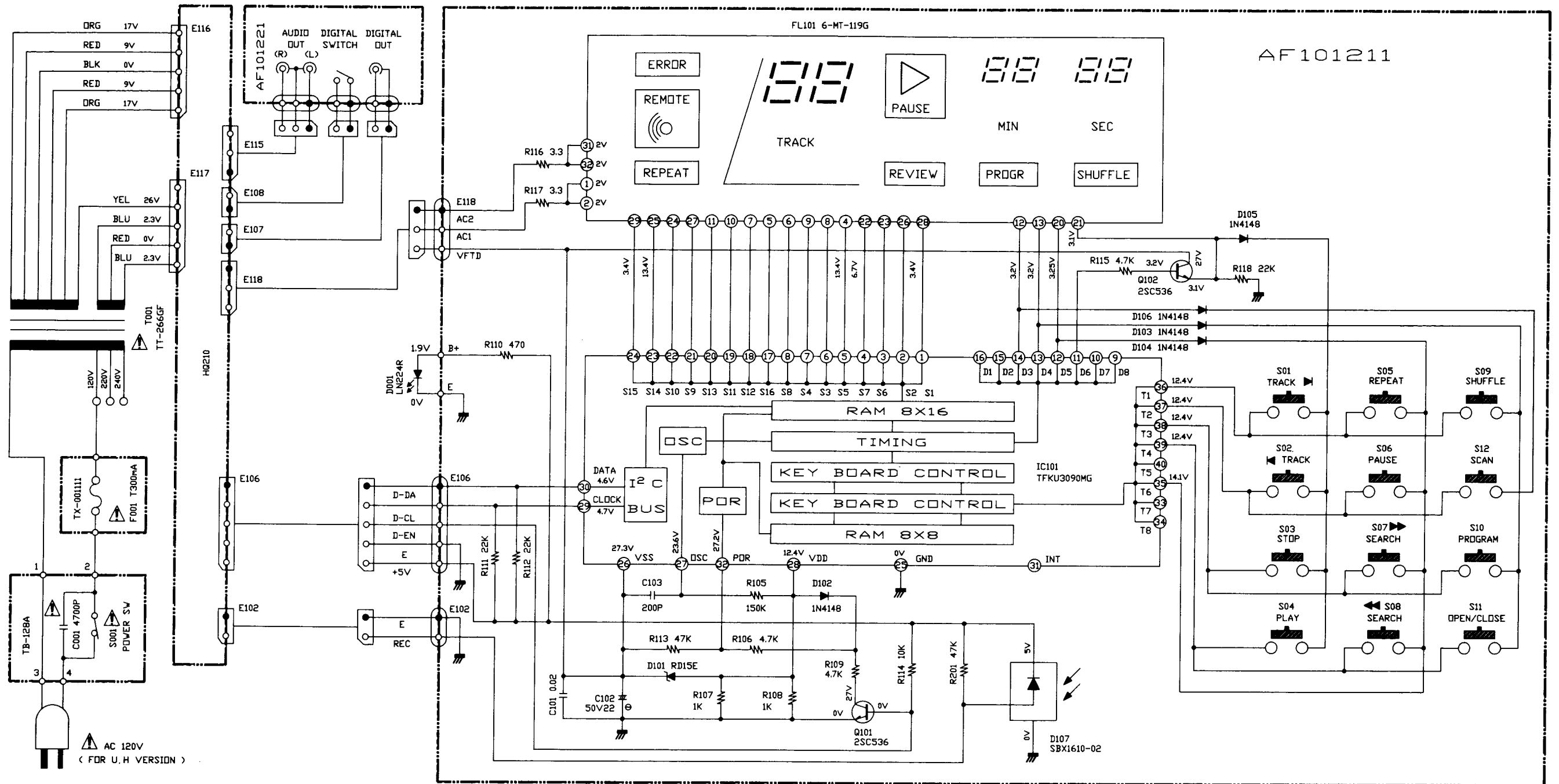
(HQ210 SOLDER SIDE)



Schematic Diagram

SCHEMATIC DIAGRAM MODEL RCD-955AX

NOTE: PARTS AND CIRCUIT SUBJECT TO CHANGES FOR IMPROVEMENTS WITHOUT PRIOR NOTICE

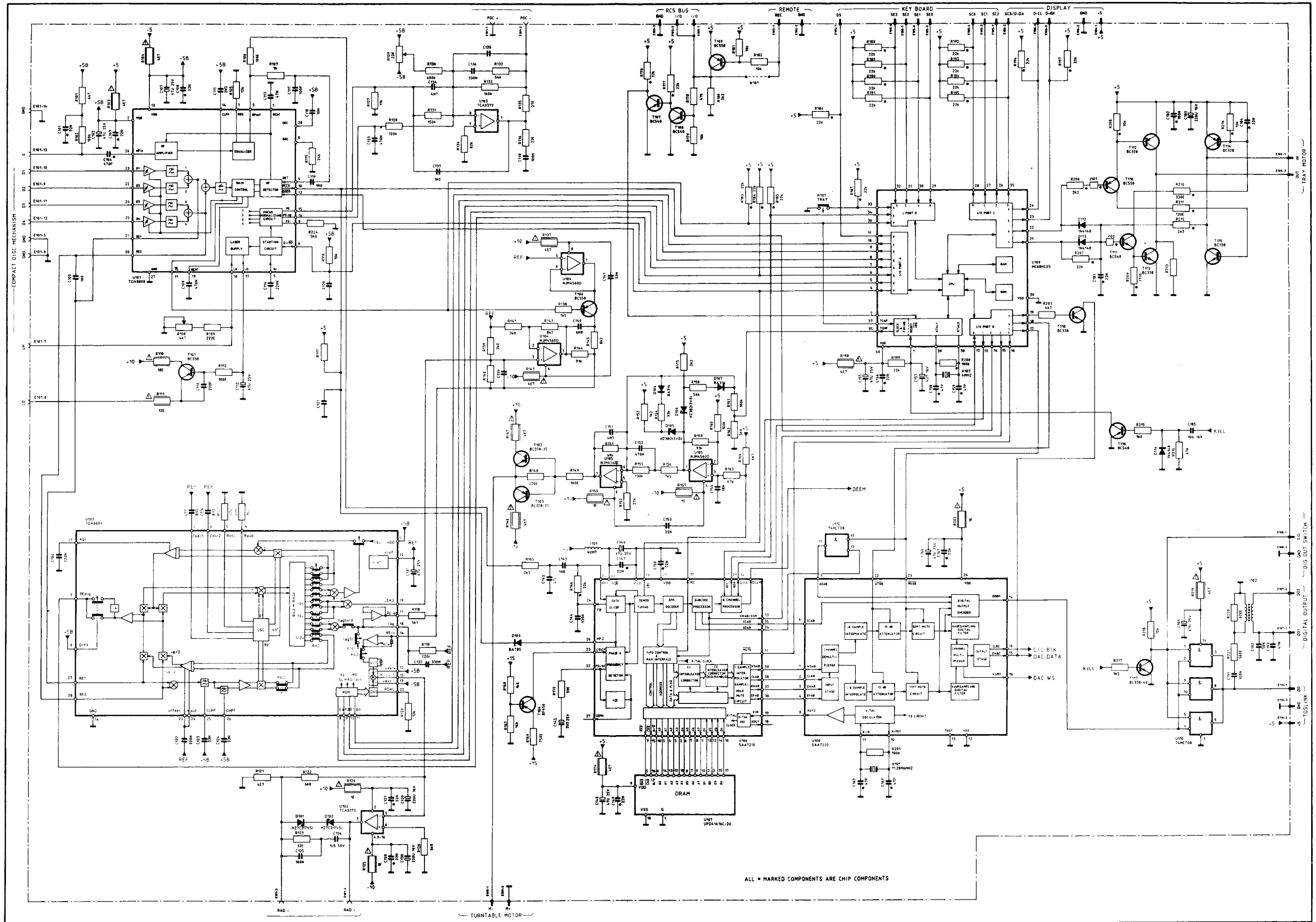


INSTRUCTION FOR SERVICING PERSONNEL:

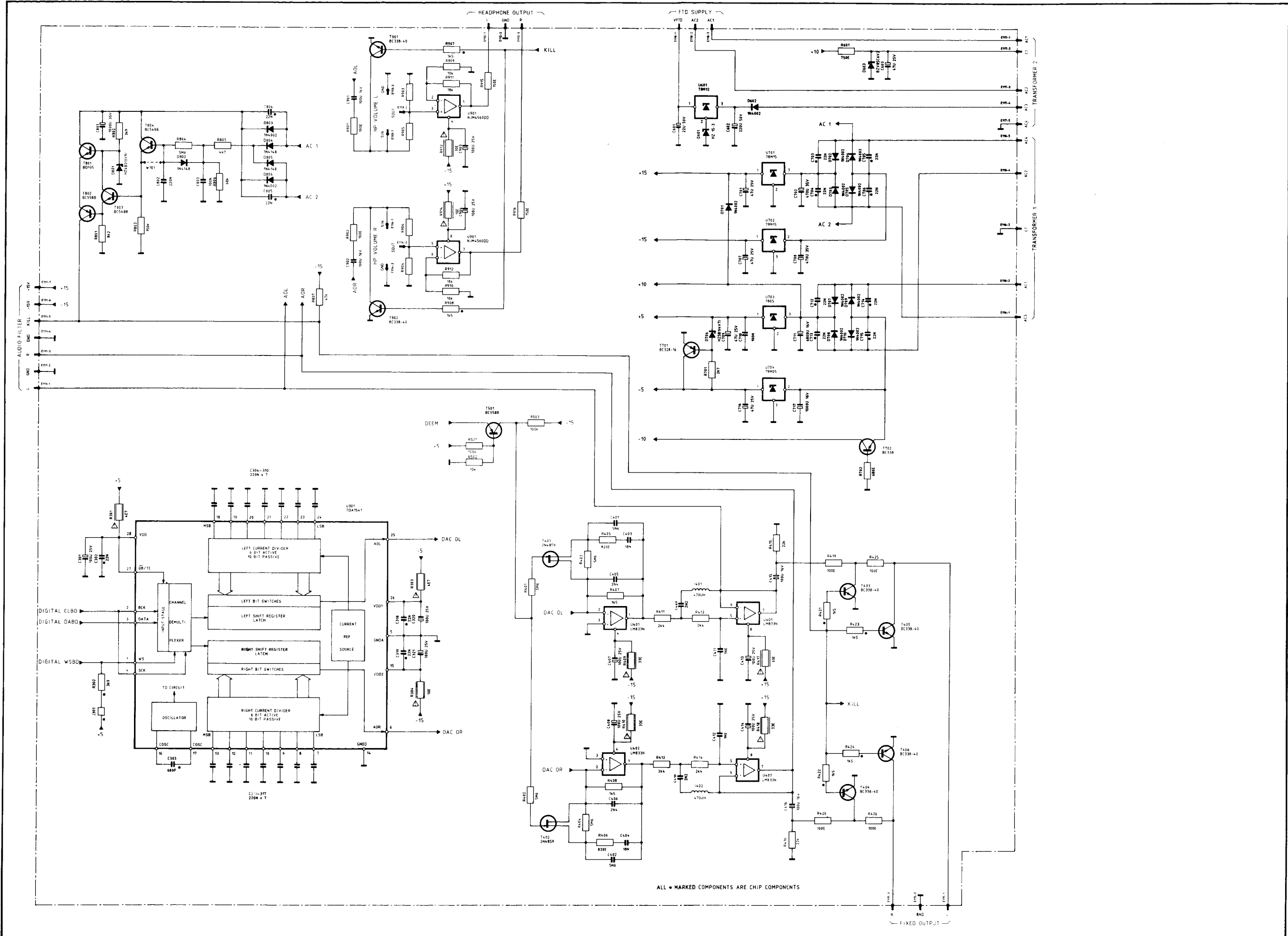
1. USE ONLY REPLACEMENT PARTS THAT HAVE THE CRITICAL CHARACTERISTICS RECOMMENDED BY MANUFACTURER.
2. MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE AC SUPPLY CIRCUIT BEFORE RETURNING THE UNIT TO THE CUSTOMER.

Schematic Diagram

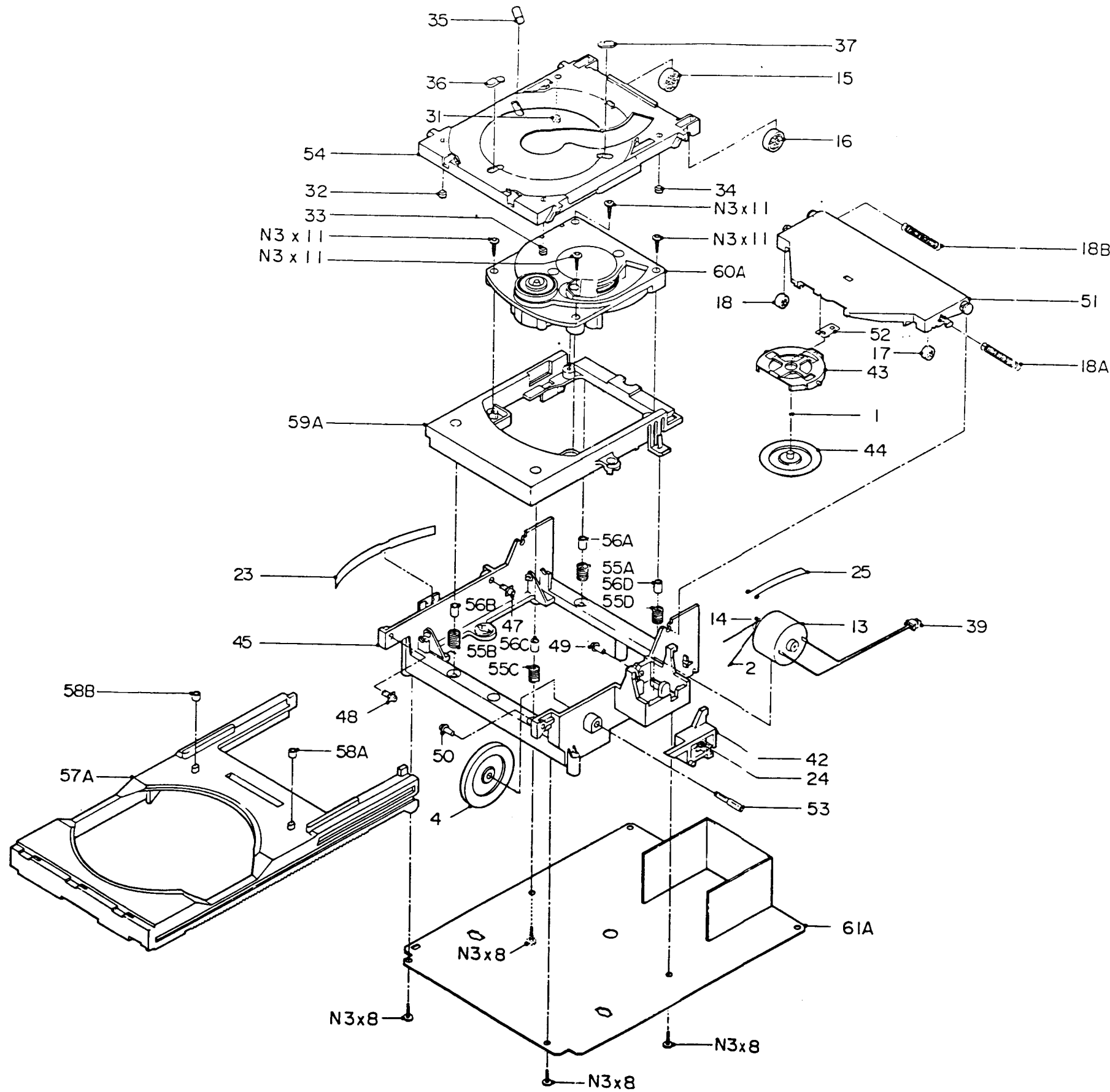
MONOBOARD SCHEMATIC HQ210 (1)



MONOBOARD SCHEMATIC HQ210 (2)



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