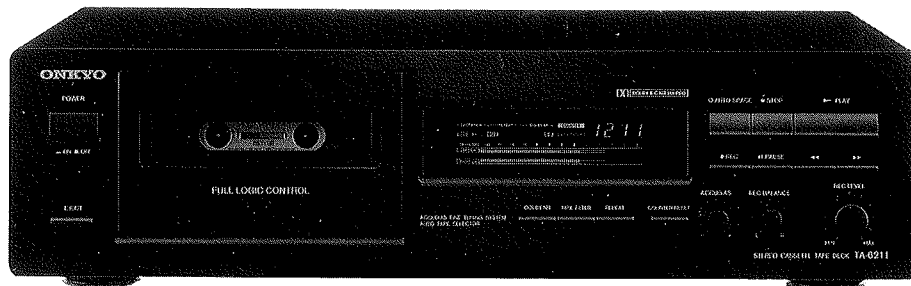


ONKYO® SERVICE MANUAL

CASSETTE TAPE DECK MODEL TA-6211



Black and Silver models

BMP/SMP	230V AC, 50Hz
BMPT/BMWT	120V/220V AC, 50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

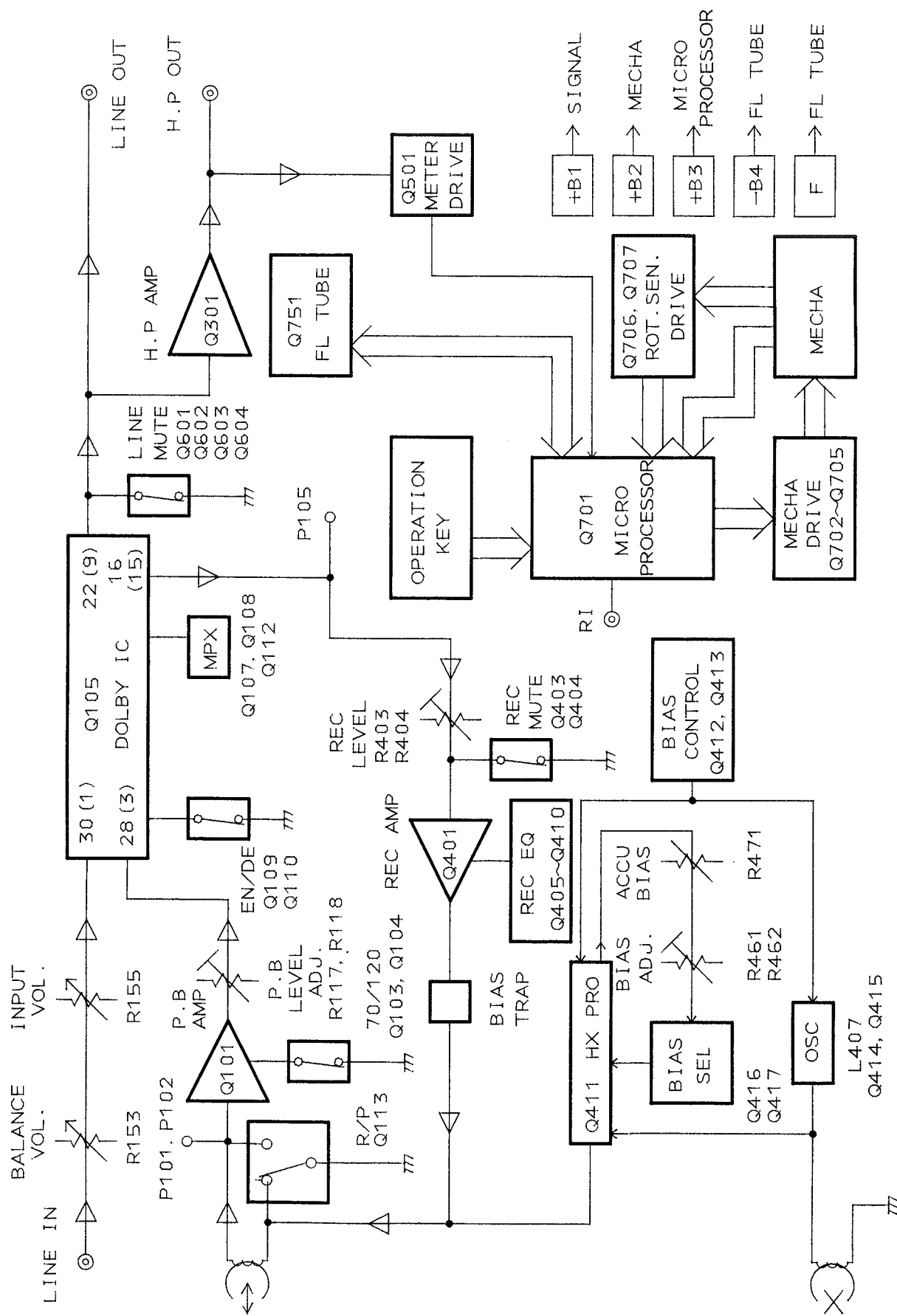
MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

SPECIFICATIONS

Track Format:	4-tracks, 2-channels
Erasing System:	AC erase
Tape Speed:	4.8 cm/sec. (1-7/8 i.p.s)
Wow and Flutter:	0.07% (WRMS) 0.09% (DIN)
Frequency Response:	20-17,000 Hz (Normal) (30-16,000 Hz $\pm$ 3 dB) 20-18,000 Hz (High) (30-17,000 Hz $\pm$ 3 dB) 20-19,000 Hz (Metal) (30-18,000 Hz $\pm$ 3 dB)
S/N Ratio:	58 dB (metal tape, Dolby NR off) A noise reduction of 10 dB above 5 kHz and dB at 1 kHz is possible with Dolby B NR. A noise reduction of 20 dB at 5 kHz is possible with Dolby C NR.
Input Jacks:	Line IN: 2 Input sensitivity: 80 mV Input impedance: 50 kohms
Outputs:	Line OUT: 2 Standard output level: 500 mV (0dB) Optimum load impedance: over 50 kohm
Motors:	DC servo motor: 1 DC motor: 1
Head:	REC/PB; Special Hard Permalloy $\times$ 1 Erase head : Ferrite $\times$ 1
Power Supply Rating:	AC 230V, 50 Hz AC 120V and AC 220-230V, Switchable 60/50 Hz
Power Consumption:	20 watts
Dimensions (W $\times$ H $\times$ D):	435 $\times$ 121 $\times$ 310mm 17-1/8" $\times$ 4-3/4" $\times$ 12-3/16"
Weight:	4.7 kg.(10.4 lbs.)

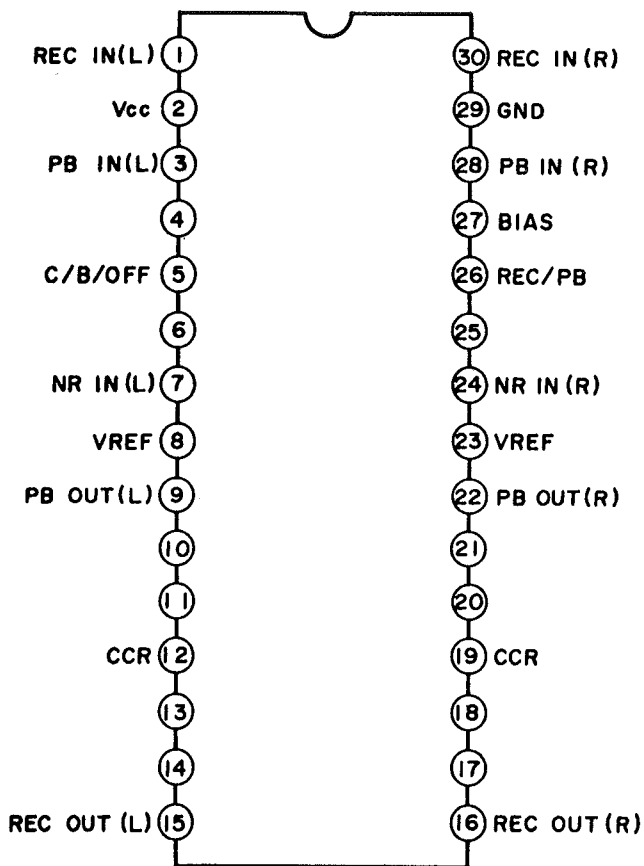
ONKYO®
AUDIO COMPONENTS

BLOCK DIAGRAM

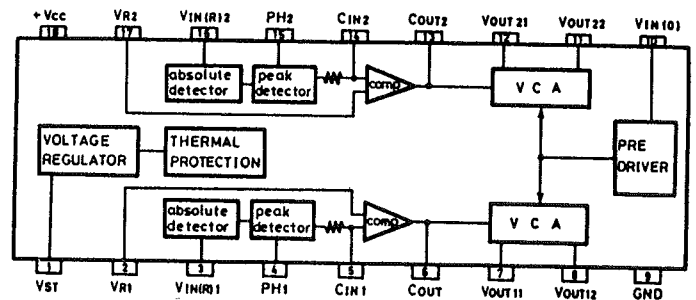


IC BLOCK DIAGRAM

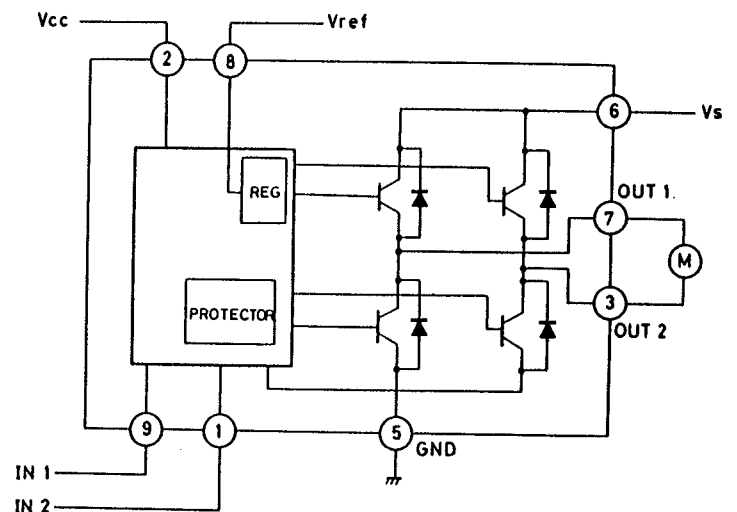
Q105 HA12142NT(DOLBY NR)



Q411 μPC 1297CA (HX PRO)

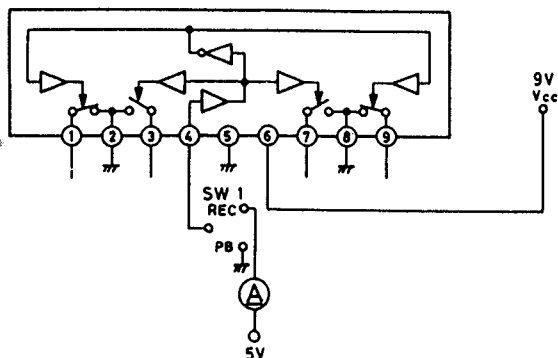


Q702 TA7291S (MOTOR DRIVE)



INPUT		OUTPUT		MODE
IN 1	IN 2	OUT 1	OUT 2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

Q113 μPC 1330HA (REC/PB)



ADJUSTMENT PROCEDURES

PRECAUTION

- Before adjustment, clean the following parts with an alcohol moistend swab.
 *record/playback head *erase head
 *pinch roller *capstan
- Do not use magnetized screwdriver for adjustment.
- Demagnetize record/playback head with a head demagnetizer.

TEST EQUIPMENT/TOOL REQUIRED

Audio oscillator
 Digital frequency counter
 Oscilloscope
 Attenuater
 AC voltmeter
 Non-magnetic screwdriver
 Test tapes
 TCC-153 : 10kHz, -15dB
 MTT-111N : 3kHz, -10dB
 MTT-150 : Dolby level calibration
 400Hz, tone 200nWb/m

Item	Connection of instrument	Line output freq/level	Test tape	Mode	Output indicator	Adjustment point	Adjustment	Remarks
1 Tape speed	Frequency counter to LINE output terminals		MTT-111N	PB	Frequency counter	Screw on back side of Capstan motor	3,000Hz±10Hz	
2 Head azimuth	AC voltmeter and oscilloscope to LINE output terminals		TCC-153	PB	AC voltmeter	Fig.1	Maximum level & same phase at channels L and R	
3 Playback level	AC voltmeter to terminals TP-1 P105		MTT-150	PB	AC voltmeter	R117 (L.ch) R118 (R.ch)	300mV	
4 OSC Block	Frequency counter to P401 lead-Wire loose coupling		NONE or METAL TAPE	STOP	Frequency counter	L407	107kHz±1kHz	FT mode is activated when J147 is connected to GND.
5 Bias current		1kHz & 10kHz -23dB 35mV	NORMAL TAPE	REC/ PB	AC voltmeter	R461 (L.ch) R462 (R.ch)	0~+1.0dB at 1kHz and 10kHz	FT mode is activated when J147 is connected to GND.
6 Recording level		1kHz 350mV	NORMAL TAPE	REC/ PB	AC voltmeter	R403 (L.ch) R404 (R.ch)	Same level at REC/PB	FT mode is activated when J147 is connected to GND.

Blank tapes

NORMAL•••UD-1 C-90

HIGH•••••XL-II C-90

METAL••••XS C-90

Head azimuth screw

PLAY torque•••••30~70g/cm

FF.REW torque•••••80~180g/cm

Back tension•••••6~12g/cm

Don't touch these screws.

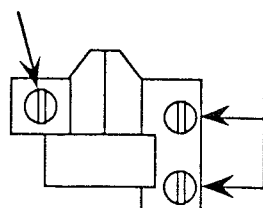


Fig.1 R/P Head

● **FT mode:** FT mode will be activated when J147 is connected to GND.

● Once AUTO SPACE key is pressed, the recording starts. Then the AUTO SPACE key is pressed once more, the recording stops and the tape is rewound up to the recording start-point, and the playing-back starts.

● Press the stop key in stop mode, the bias oscillator is activated at METAL position.

ADJUSTMENT POINT

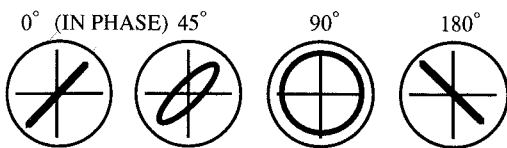
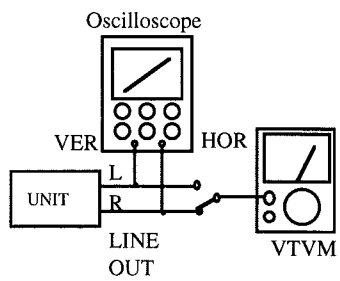
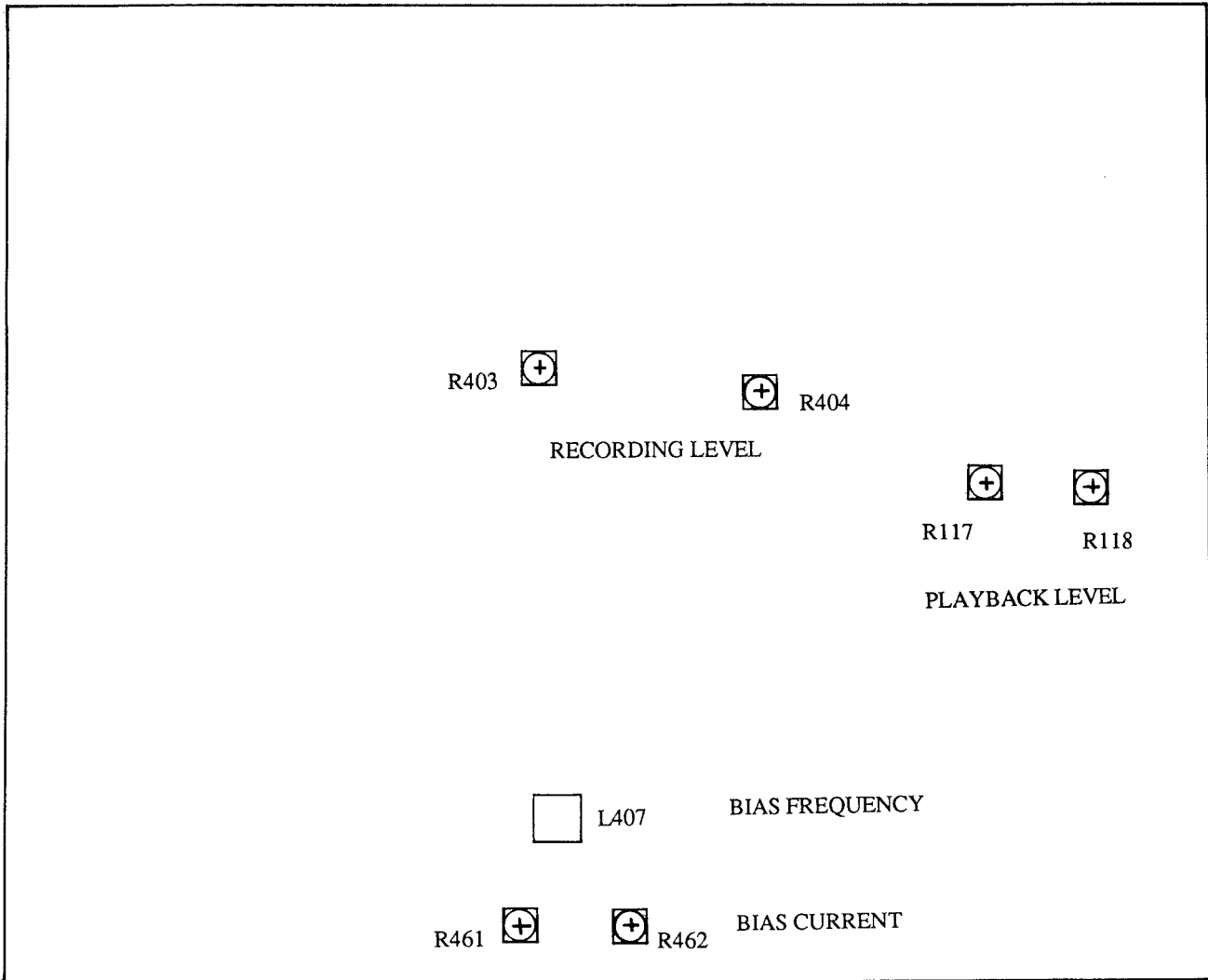


Fig.1 Confirming phase relationship

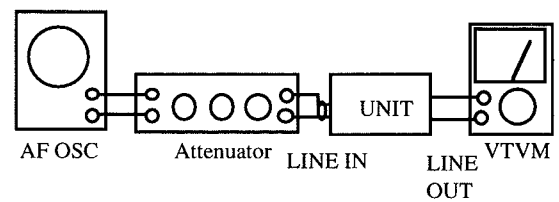
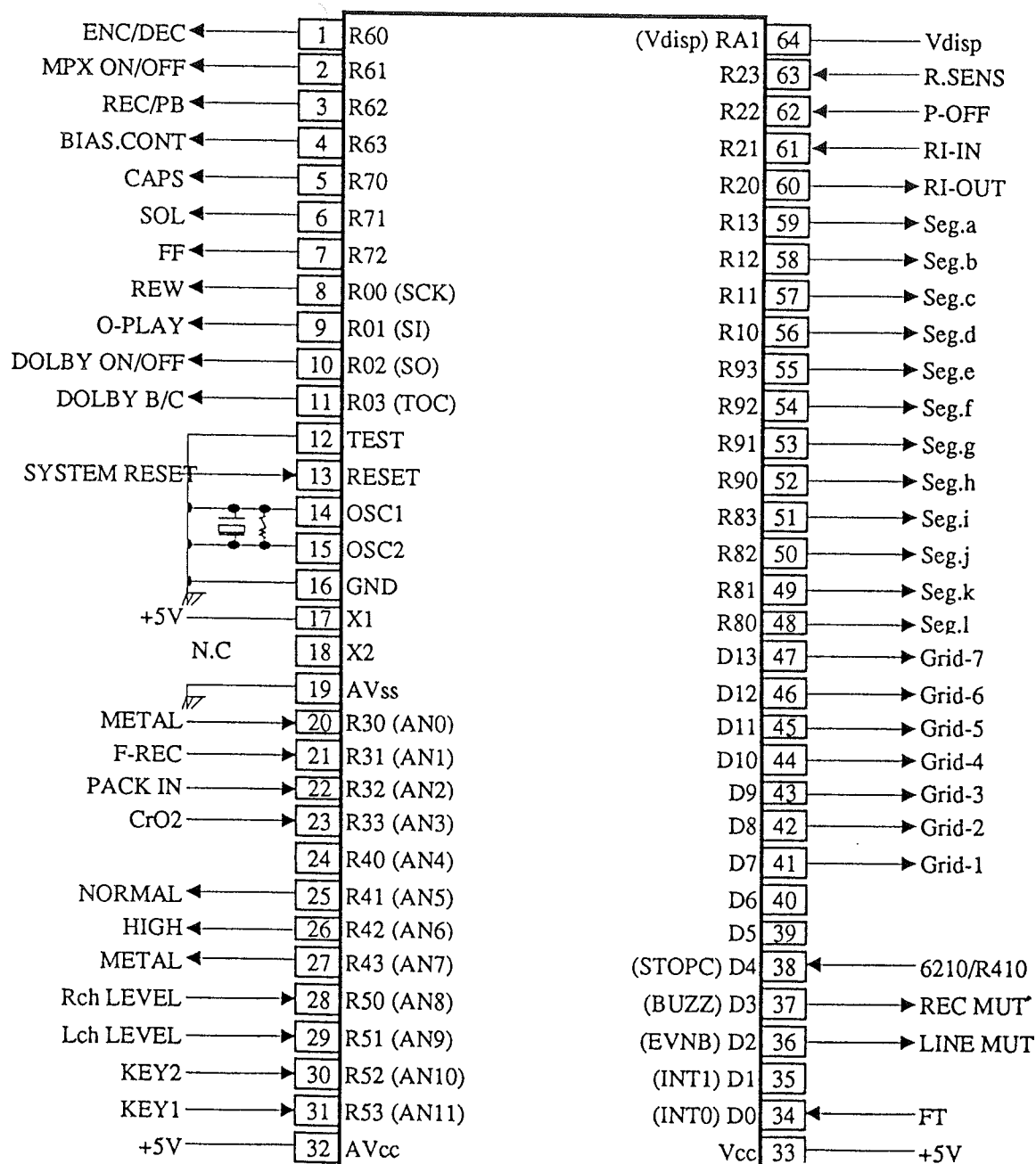


Fig. 2

MICROPROCESSOR CONNECTION DIAGRAM

Q701

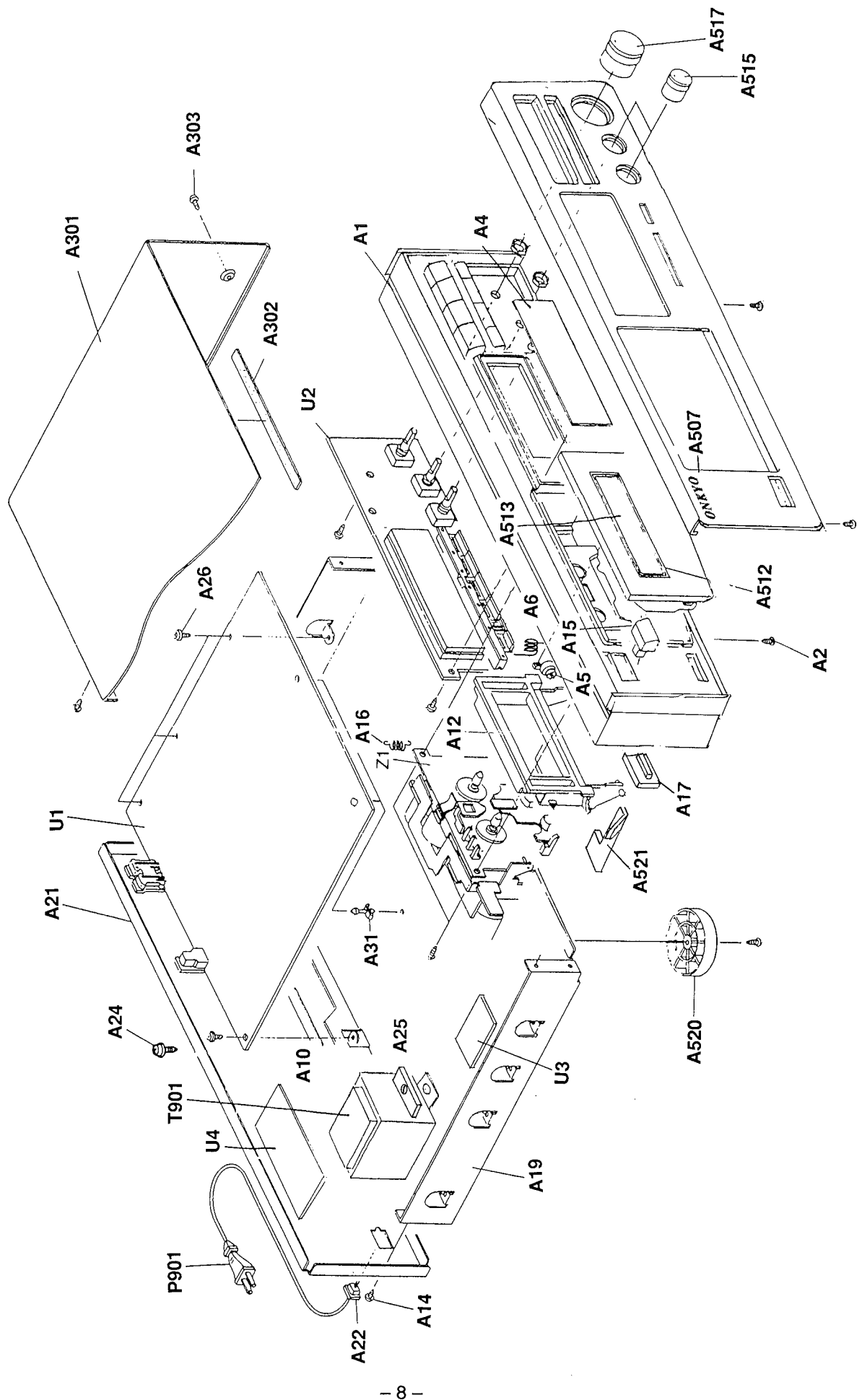
HD404336A33S



MICROPROCESSOR TERMINAL DESCRIPTION

PIN NO.	TERMINAL	I/O	DESCRIPTION
1	ENC/DEC	O	Decorder/Encoder change-over output
2	MPX ON/OFF	O	Multiplex filter change-over output
3	REC/PB	O	Recording/Playback change-over output
4	BIAS.CONT	O	Bias current change-over output
5	CAPS	O	Capstan motor control output
6	SOL	O	Solenoid control output
7	FF	O	Reel motor control output
8	REW	O	Reel motor control output
9	O-PLAY	O	Torque control output of reel motor
10	DOLBY ON/OFF	O	Dolby control output
11	DOLBY B/C	O	Dolby control output
12	TEST		Test terminal
13	SYSTEM RESET	I	System reset input
14	OSC1		Connect the 4MHz ceramic resonator.
15	OSC2		
16	GND		Ground terminal
19	GND		Ground terminal for A/D converter
20	METAL	I	Metal position tape detection input
21	F-REC	I	Foward recording prevention detection input
22	PACK IN	I	Cassette tape detection input
23	CrO2	I	High position tape detection input
25	NORMAL	O	Recording/Playback equalizer control outputs On at the high level
26	HIGH	O	
27	METAL	O	
28	Rch LEVEL	I	Rch level input
29	Lch LEVEL	I	Lch level input
30	KEY2	I	Operation key input terminal
31	KEY1	I	Operation key input terminal
32	+5V		Power supply for A/D converter
33	+5V		Power supply
34	FT		Adjustment mode setting
36	LINE MUT	O	Line muting output
37	REC MUT	O	Recording muting output
38	6210/R410	I	6210/R410 Change-over input
41-47	Grid	O	Grid outputs
48-59	Seg.	O	Segment outputs
60	RI-OUT	O	RI code output
61	RI-IN	I	RI code input
62	P-OFF	I	Detection input when the power source is turned on.
63	R.SENS	I	Stand rotation pulse input
64	Vdisp		Vdisp

CHASSIS-EXPLODED VIEW



CHASSIS-EXPLODED VIEW PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
A1	27111003B	Front bracket AS
	27111004B	Front bracket AS <S>
A2	838130088Y	Screw, 3TTB+8B
A4	28191785Y	Clear plate (FL)
	28191786Y	Clear plate (FL) <S>
A5	24611627Y	Damper
A6	27180435Y	Spring
A10	27130747Y	Bracket (PC)
A12	27301792AY	Cassette frame
A14	838130088Y	Screw, 3TTB+8B
A15	28325465	Knob (POW)
	28325466	Knob (POW) <S>
A16	27180554B	Spring
A17	28325463	Knob (Eject)
A19	27100322AY	Chassis
A21	27122337Y	Rear panel <P>
	27122338Y	Rear panel <PT>
	27122339Y	Rear panel <WT>
	△ 27300750	Cord busing, #2271
A22	838430107Y	Screw, 3TTB+10S(BC)
A23	830440089Y	Screw, 4TTC+8C(BC)
A24	27141692	Retainer (PT)
A25	831430088Y	Screw, 3TTW+8B(PC)
A26	27190480-1Y	Holder, PCB-8L
A31	28184664Y	Top cover
A301	28184669Y	Top cover <S>
A303	838430088Y	Screw, 3TTB+8B(BC)
	838230088Y	Screw, 3TTB+8B(NI) <S>
A302	28141332Y	Cushion , t1.5
A501	27211923Y	Front panel
	27211924Y	Front panel <S>
REF. NO.	PART NO.	DESCRIPTION
A507	28135244Y	Badge
	28135245Y	Badge <S>
A512	27301924Y	Cassette Lid
	27301925Y	Cassette Lid <S>
A513	28191764A	Clear plate (LID)
A515	28325452Y	Knob (MIC)
	28325515Y	Knob (MIC.) <S>
A517	28325526	Knob (REC)
	28325527	Knob (REC) <S>
A520	27175316B	Leg
A521	28335039AY	Lever (Eject)
P101A	2009990356ULY	NSAS-6P0493, Socket AS (R/P)
P401A	2009990359ULY	NSAS-2P0496, Socket AS (E/H)
P901	253193HITY or	AS-CEE, ACC. CORD <P,PT,WT>
	253195MARY	AS-CEE, AC CORD
T901	2301009-1	NPT-1206P-A, Power transformer <P,PT>
T901	2301010-1	NPT-1206DG-A,Power transformer <WT>
W701	2047272512Y	NCFC7-272512, Flat flexible cable
U1	IN272536-4AY	Main pc board Assy (NAAF-5336-4A) <P,PT>
U1	IN272536-4BY	Main pc board Assy (NAAF-5336-4B) <WT>
U2	IN272537-4AY	Display circuit pc board (NADIS-5337-4A) <P,PT>
U2	IN272537-4BY	Display circuit pc board (NADIS-5337-4B) <WT>
U3	IN272539-4AY	Switch pc board (NASW-5339-4A) <P,PT>
U3	IN272539-4BY	Switch pc board (NASW-5339-4B) <WT>
U4	IN272540-4AY	Power supply pc board (NAAF-5340-4A) <P,PT>
U4	IN272540-4BY	Switch pc board (NAAF-5340-4B) <WT>

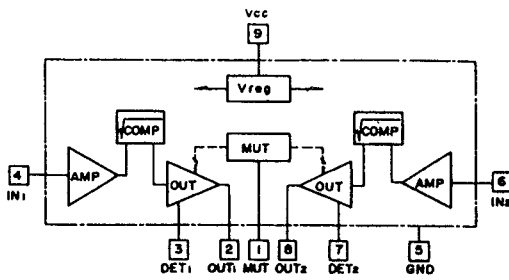
NOTE: Black model only
 <S> Silver model only
 <P> 230V model only
 <PT> Taiwanese model only
 <WT> Asians model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK

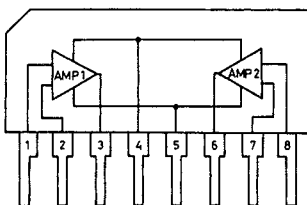
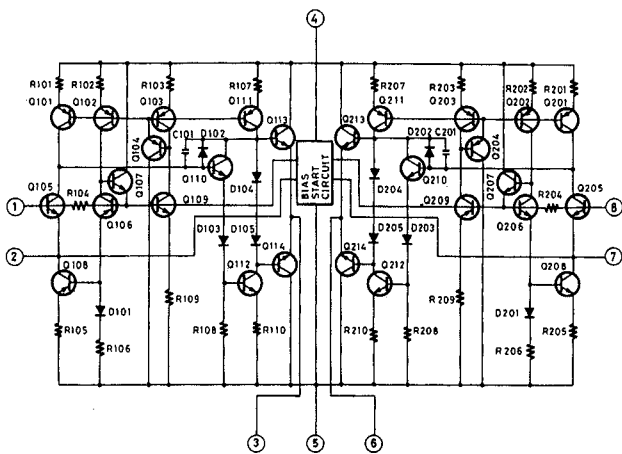
△ ARE CRITICAL FOR RISK OF FIRE AND
 ELECTRIC SHOCK. REPLACE ONLY WITH
 PART NUMBER SPECIFIED.

IC BLOCK DIAGRAM

Q501 BA6138 (METER DRIVER)



Q101 μ PC 1228HA (OP AMP)

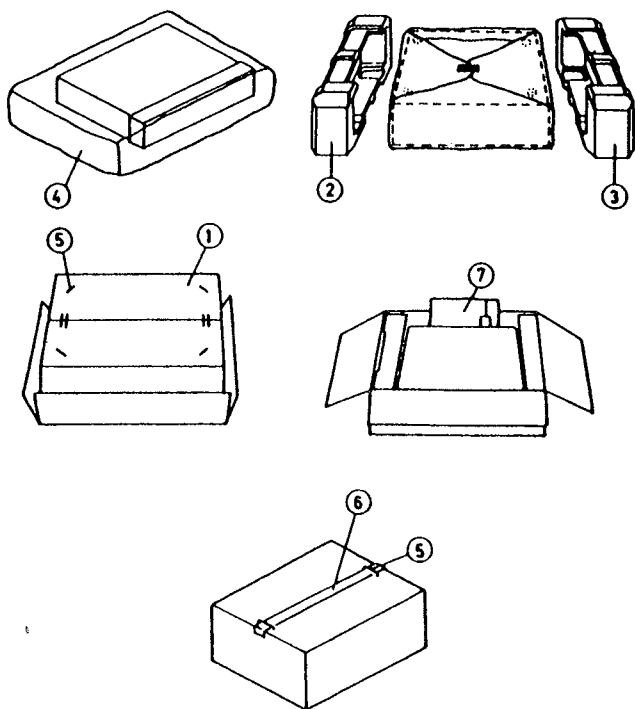


NO.	
1	INPUT 1
2	N. F. B. 1
3	OUTPUT 1
4	+Vcc
5	GND
6	OUTPUT 2
7	N. F. B. 2
8	INPUT 2

TAPE MECHANISM-PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
2-2	F564-280	Motor, reel
3	F513-641	Plate, Head bracket
3-9	FU19U-11	Rec./Play head, MS15R-AA2N
3-10	FU20N-11	Erase head, LE15A-C14
4	F525-269	Motor, main
5	F567-575	Control PCB
18	FF17W-31	Main belt
31	FR20L-23	Pinch roller (R)
Z1	244205	Deck Mechanism, NDM-196
Z2	24603415Y	Lever (EJ) AS
Z3	24603417	Arm (EJ)
Z4	246003428	Lever (SB)
Z5	24611612Y	Retainer (L)AS
Z6	24611614Y	Retainer (R)AS
Z7	24605803Y	Spring
Z8	8930301SY	Ring (E), E-3S
Z9	833126047Y	Screw, 2.6TTP+4S
Z11	24609074Y	Screw
Z12	82212005Y	Screw, 2S+5F

PACKING VIEW



PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
1	29053161Y	Carton box
	29053162Y	Carton box <S>
2	29091636-1D	Pad (L)
3	29091637-1D	Pad (R)
4	29100034-1AY	Polythene bag 650x850
5	282321Y	Staple
6	29110071	PP tape
7	Accessory bag ass'y	
	29342445Y	Instruction manual, E
	29342446Y	Instruction manual, U3FSI <P>
	29342447Y	Instruction manual, U3GSwD <P>
	29342448Y	Instruction manual, T <PT, WT>
	29100097-1AY	Polythene bag 350x250
	2010244Y or	Pin cord
	2010326Y	
	2010200Y	3.5mm plug, RI
	25055018	CV-K-1, Converter plug
	29361786Y	Label (Malaysia) <PT, WT>
	293632193	Label (EAN)AS
	293632194	Label (EAN)AS <S>

NOTE: Black model only
 <S> Silver model only
 <P> 230V model only
 <PT> Taiwanese model only
 <WT> Asians model only

A B C D E F G

TAPE MECHANISM-EXPLODED VIEW

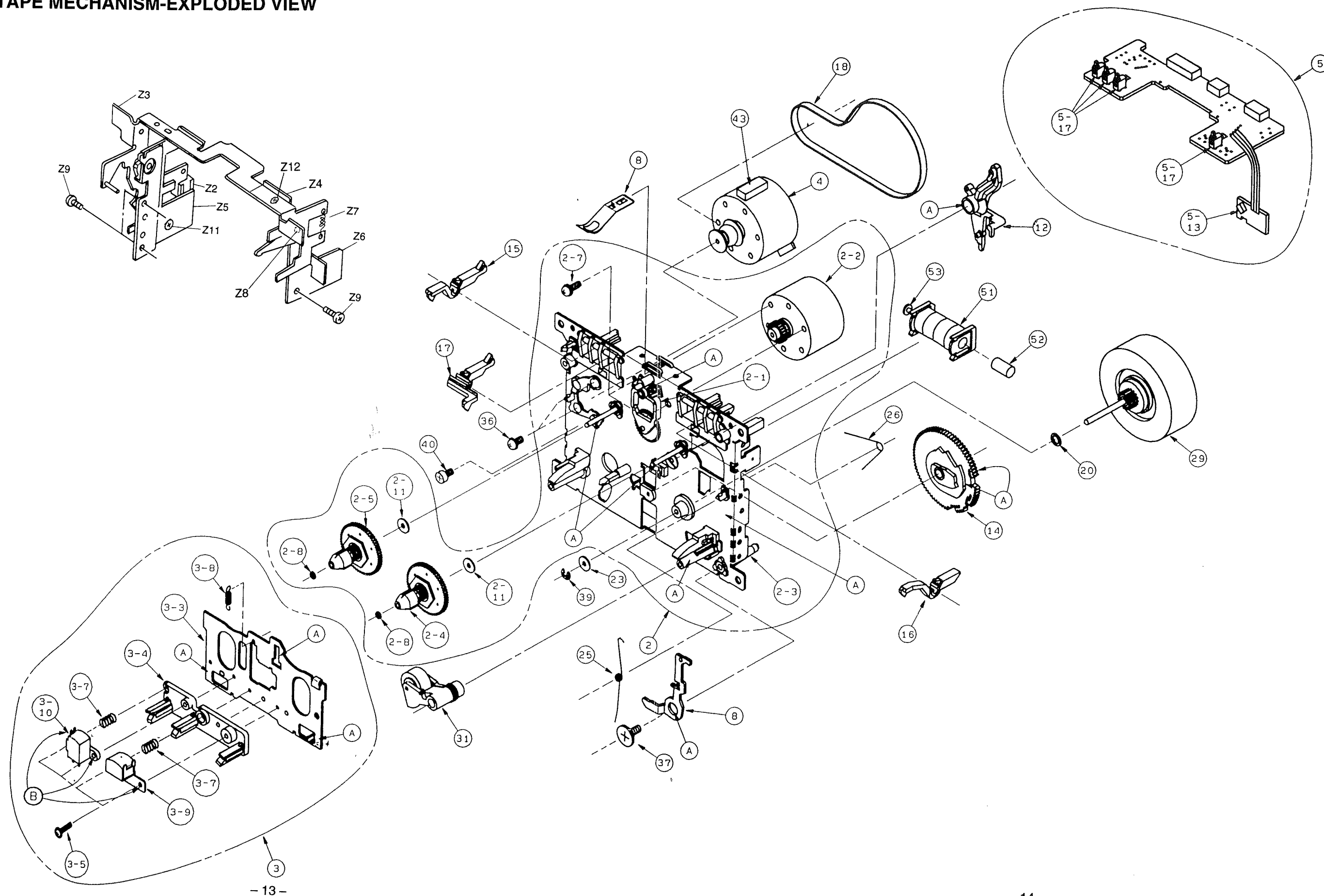
1

2

3

4

5



PRINTED CIRCUIT BOARD- PARTS LIST

U1 MAIN CIRCUIT PC BOARD (NAAF-5336)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q101	222905	MPC1228IIA
Q105	22240388	HA12142NT
Q113	22240147	MPC1330HA
Q301,Q401	22240369	M5218AP
Q411	222959	MPC1297CA
Q501	22240313	BA6138
Q701	22240866	HD404336A33S
Q702	22240239	TA7291S
Q904	222780055NEC or 222780055JRC	MPC78M05AHF or NJM78M05FA
	Transistors	
Q103,Q104,Q107, Q108-Q112, Q405-Q410, Q413,Q416,Q417, Q602,Q703,Q707, Q910	221281	DTC114YS
Q403,Q404,706, Q708,Q709,901, Q902,Q905,Q906	2213285 or 2213284	2SC1740S-S or 2SC1740S-R
Q412	2211504	2SA950-Y
Q414,Q415	2201883	2SC1213-C
Q601,Q908	2213355 or 2213354	2SA933S-S or 2SA933S-R
Q603,Q604,Q704, Q705	2211705 or 2211706	2SD655-E or 2SD655-F
Q903,Q907	2202724 or 2202725	2SB1569A-D or 2SB1569A-E
Q909	2213090	DTA114YS
	Diodes	
D601-D603,D605, D606,D703,D704, D907,D908,D912, D913,D914	223163	1SS133
D701	224470752	MTZJ7.5B, Zener
D702	224470472	MTZJ4.7B, Zener
D705,D911,D916	224470562	MTZJ5.6B, Zener
D901,D902,D904, D906	22380046	AM01Z
D909,D910	224471303	MTZJ13C, Zener
D915	224471803	MTZJ18C, Zener
D917	224470433	MTZJ14.3C, Zener
	Coils	
L101,L102	233436	NMC-6081
L401,L402	231084	NCH-2132
L403,L404	231085	NCH-2133
L405,L406	231218	NCH-4453
L407	231223	NLO-2064
	Ceramic lock	
X701	3010150	CST4.00MGW
	Capacitors	
C101,C102	374726814	680pF $\pm 5\%$, 50V, Plastic
C103,C104,C121, C122,C123,C124, C907,C916,C922	354780229	2.2 μ F, 50V, Elect.
C109,C110,C427, C428,C447	374721034	0.01 μ F $\pm 5\%$, 50V, Plastic
C111,C112	354744709	47 μ F, 16V, Elect.
C113,C114,C129, C130,C145,C146, C151,C152,C301, C302,C307,C308, C405,C406,C411, C412,C450,C451, C701,C709,C904, C926	354761009	10 μ F, 35V, Elect.
C115,C116,C421, C422	374721834	0.018 μ F $\pm 5\%$, 50V, Plastic
C117	354744719	470 μ F, 16V, Elect.
C125,C503,C504, C606,C607,C608	354780109	1 μ F, 50V, Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
C127,C128,C131, C132,C133,C134, C135,C136,C403, C404,C419,C420	374722224	2200pF $\pm 5\%$, 50V, Plastic
C137,C138,C139, C140,C602,C901, C928,C929	374721044	0.1 μ F $\pm 5\%$, 50V, Plastic
C141,C142,C149, C452,C505,C705, C903,C908,C910	354741019	100 μ F, 16V, Elect.
C407,C408,C925	354744709	47 μ F, 16V, Elect.
C409,C410	353781099	0.1 μ F, 50V, Elect.
C413,C414	374721015	100pF $\pm 10\%$, 50V, Plastic
C415,C416,C429, C430	374724714	470pF $\pm 5\%$, 50V, Plastic
C417,C418	374721634	0.016 μ F $\pm 5\%$, 50V, Plastic
C425,C905	354742219	220 μ F, 16V, Elect.
C431-C434,C439, C927	374722734	0.027 μ F $\pm 5\%$, 50V, Plastic
C435,C436	370131014	100pF $\pm 10\%$, 100V, APS C
C437,C438	370131514	150pF $\pm 10\%$, 100V, APS C
C440,C443,C501, C502,C601,C920, C921	354780479	4.7 μ F, 50V, Elect.
C444	354722219	220 μ F, 6.3V, Elect.
C445,C446	374723324	3300pF $\pm 5\%$, 50V, Plastic
C448	370139124T	9100pF $\pm 10\%$, 100V, APS C
C902	393156827S	6800 μ F, 25V, Elect.
C909	393354727S	4700 μ F, 25V, Elect.
C913	354762209	22 μ F, 35V, Elect.
C918	354761019	100 μ F, 35V, Elect.
C919	354784709	47 μ F, 50V, Elect.
C911	354741029S	1000 μ F, 16V, Elect.
	Resistors	
R117,R118	5210265	N06HR, 50KBC, Trim
R403,R404	5210262	N06HR, 10KBC, Trim
R447,R465	453530824	8.2ohm $\pm 5\%$, 1/2W, Metal
R461,R462	5210263	N06HR, 20KBC, Trim
R702	49163392405	3.9kohm $\pm 5\%$ x 5, 1/10W, R Net
R712	443524704	47ohm $\pm 5\%$, 1/2W, Metal oxide
R903	453534794	0.47ohm $\pm 5\%$, 1/2W, Metal
R907	453530224	2.2ohm $\pm 5\%$, 1/2W, Metal
R908,R915	443521004	10ohm $\pm 5\%$, 1/2W, Metal oxide
R911	443524714	470ohm $\pm 5\%$, 1/2W, Metal oxide
R923	453530104	1ohm $\pm 5\%$, 1/2W, Metal
	Jacks	
P102	25045329	NPJ-4PDBL183
P706	25045481 or 25045330	NPJ-2PDBL299 or NPJ-2PDBL184
	Sockets	
P701	25051834 or 25050859 or 25050967	NSCT-27P1621 or NSCT-27P654 or NSCT-27P754
P751	25051871 or 25050891 or 25050933	NSCT-27P1658 or NSCT-27P686 or NSCT-27P720
	Plugs	
P101	25055136	NPLG-6P120
P105	25055038	NPLG-2P29
P401	25055132	NPLG-2P116
	Radiator	
	27160211	RAD-68, Q903A
	Holder	
B852	27190713	UAMS-11-0
U2 DISPLAY CIRCUIT PC BOARD (NADIS-5337)		
CIRCUIT NO.	PART NO.	DESCRIPTION
	Fl tube	
Q751	212139	BJ337GK
	Resistors	
R153	5104403	N14RGLC250K, Rec. Balance
R155	5104399	N14RGL50K, Rec. level
R471	5104404	N14RGLC5K, ACCU
	Switches	
S771-S778, S780-S782	25035652	NPS-111-S604

CIRCUIT NO.	PART NO.	DESCRIPTION
E853	Holder 27190838A	(FL)

U3 SWITCH PC BOARD (NASW-5339)

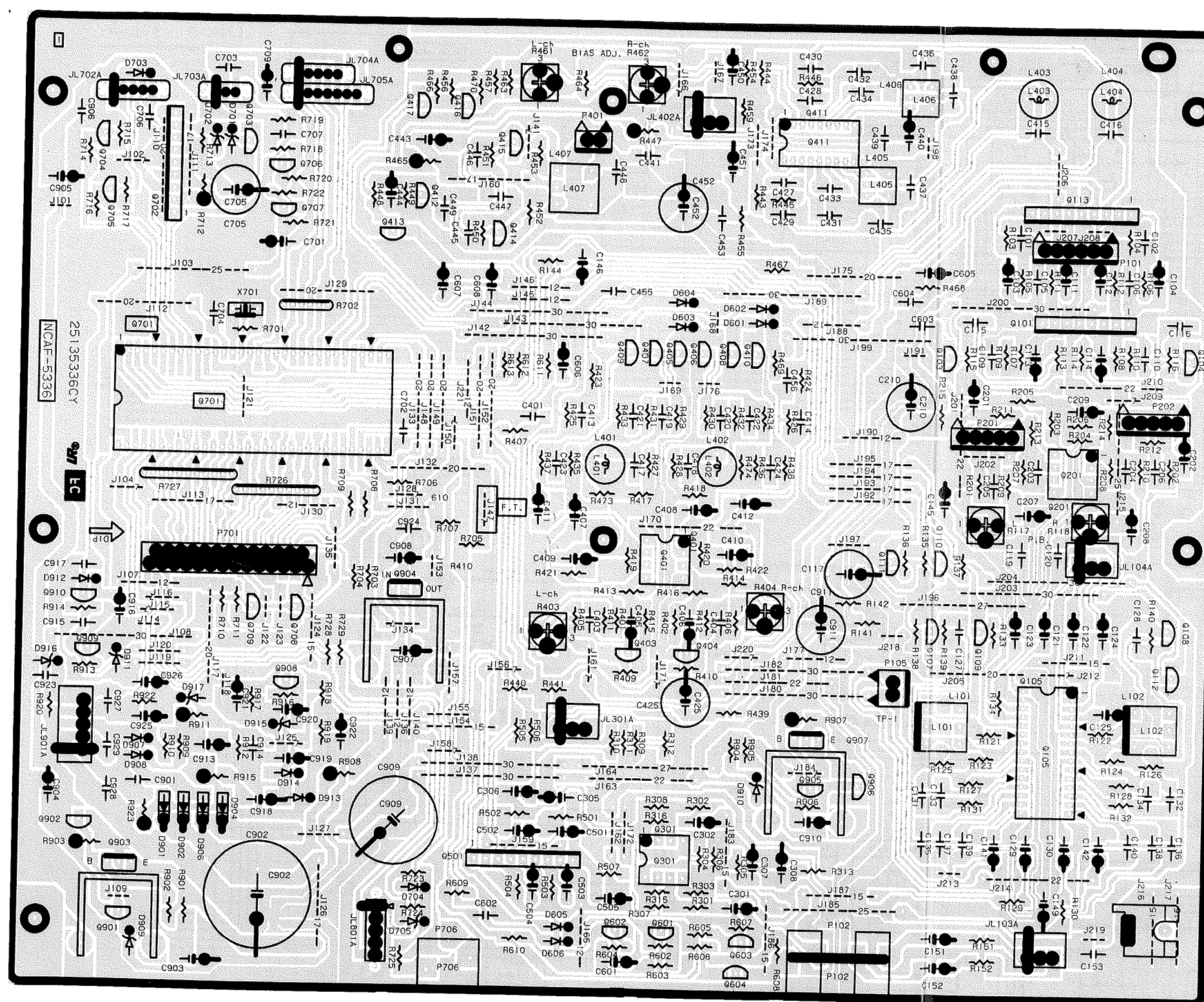
CIRCUIT NO.	PART NO.	DESCRIPTION
C951	Capacitor △ 3500191	0.01 μ F, AC400V/125V, IS C
S901	Switch △ 25035636	NPS-111-L590P

U4 POWER SUPPLY PC BOARD (NAPS-5340)

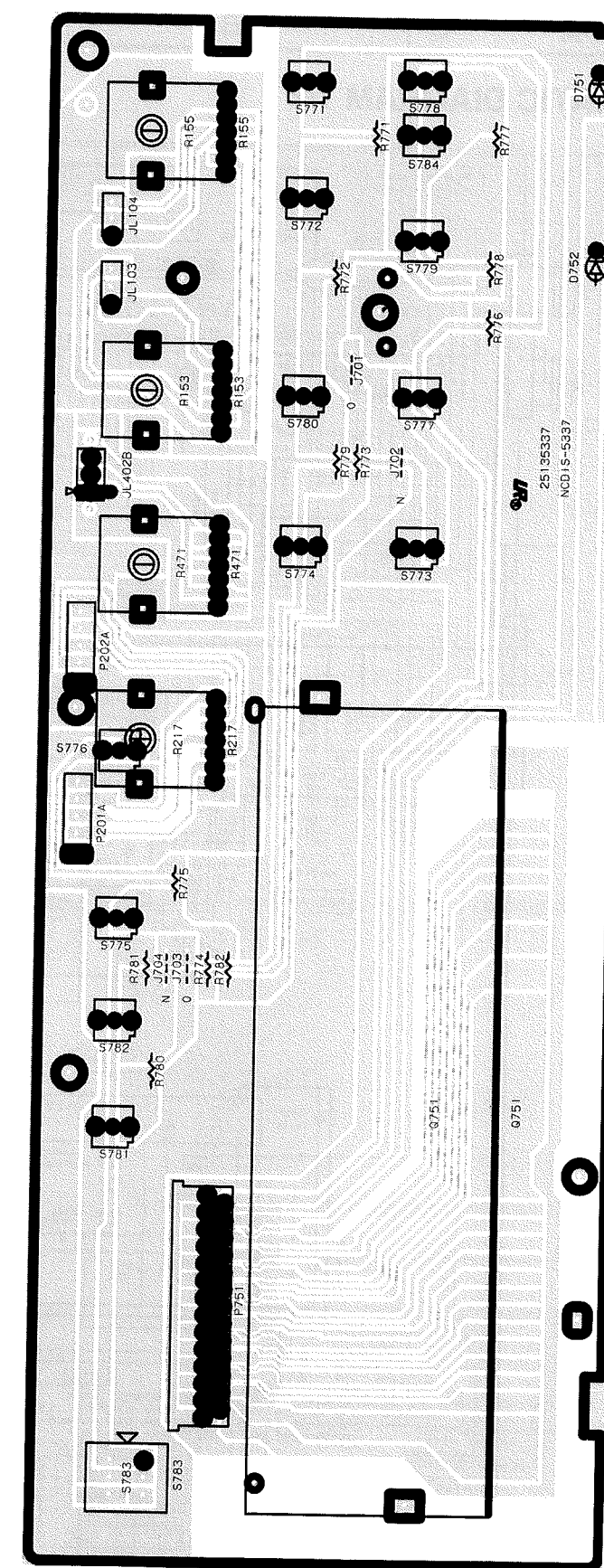
CIRCUIT NO.	PART NO.	DESCRIPTION
P951	Plug 25055675	NPLG-2P631

NOTE: THE COMPONENTS IDENTIFIED BY MARK
△ ARE CRITICAL FOR RISK OF FIRE AND
ELECTRIC SHOCK. REPLACE ONLY WITH
PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

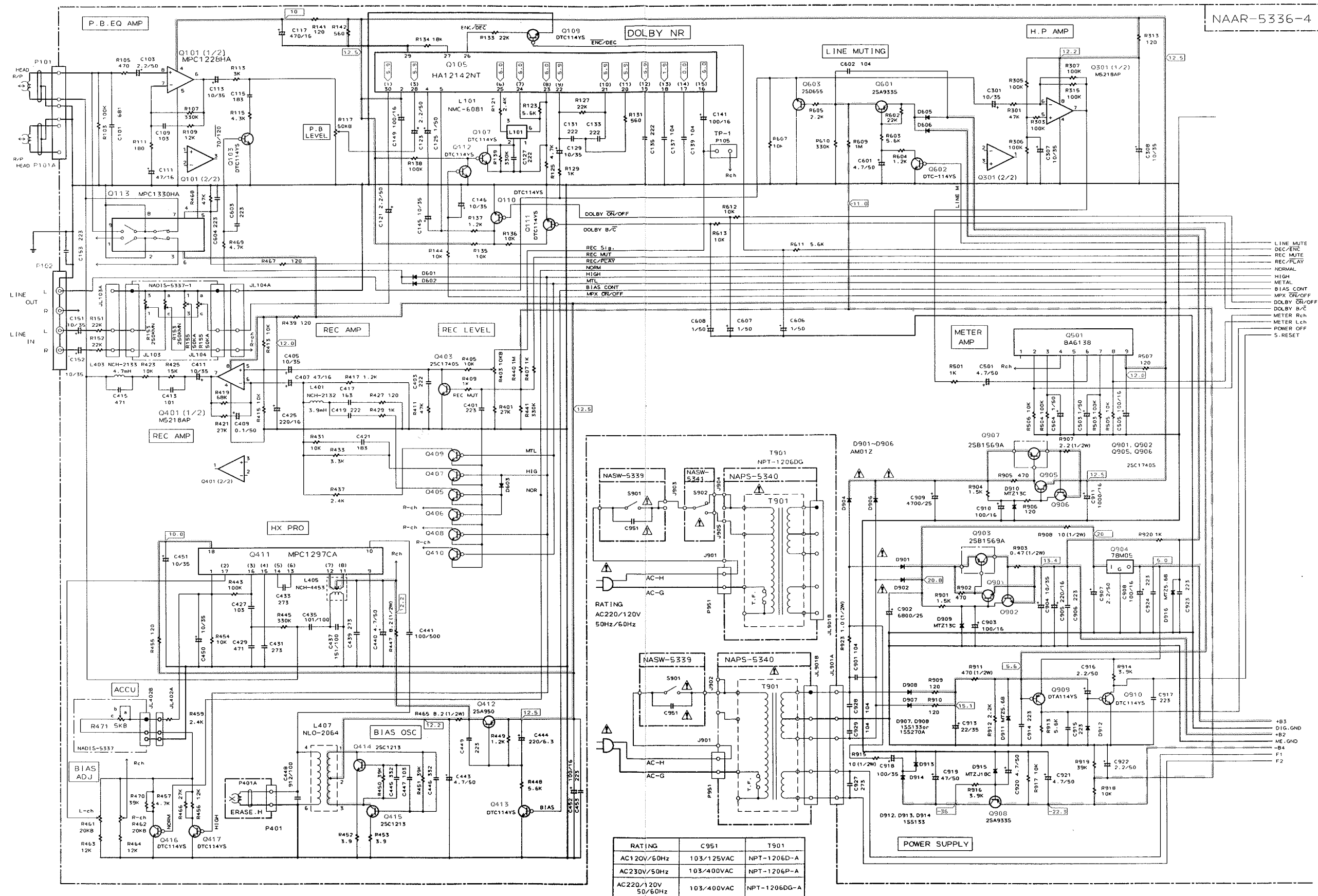


MAIN CIRCUIT PC BOARD (NAAF-5336-4)

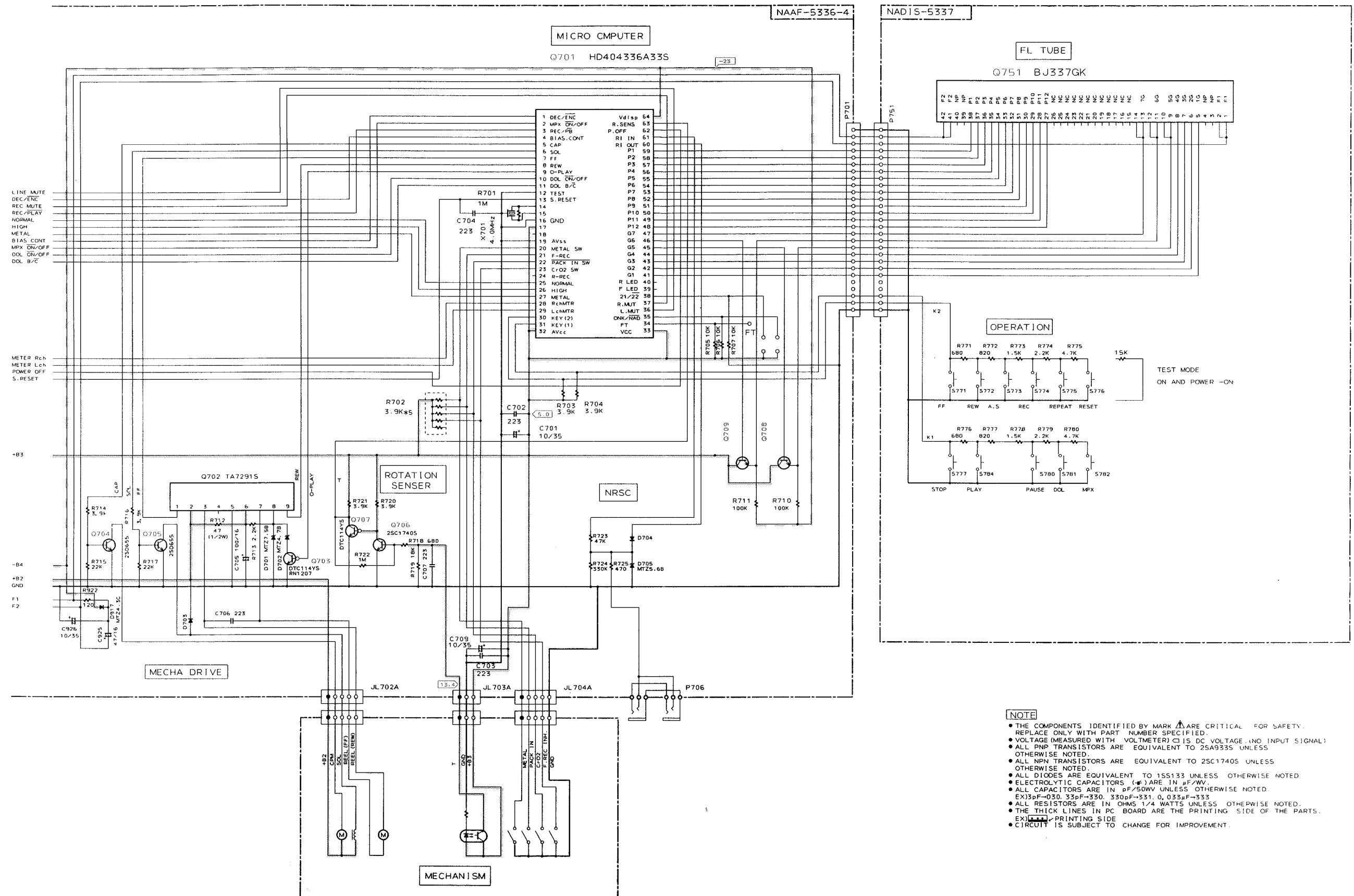


DISPLAY CIRCUIT PC BOARD (NADIS-5337-4)

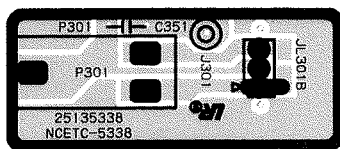
SCHEMATIC DIAGRAM 1/2



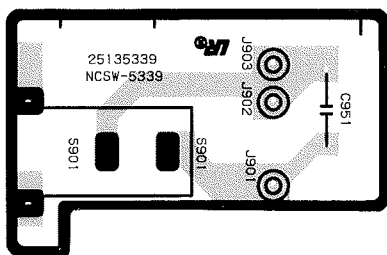
SCHEMATIC DIAGRAM 2/2



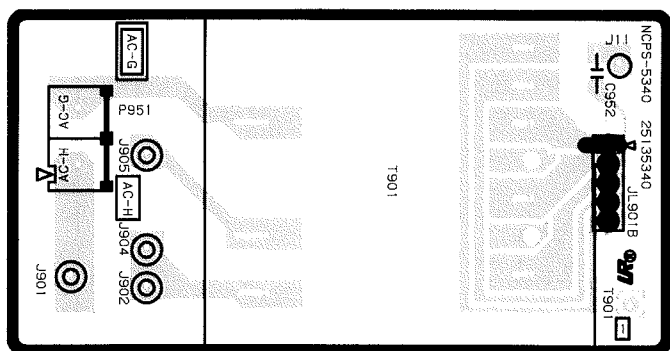
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



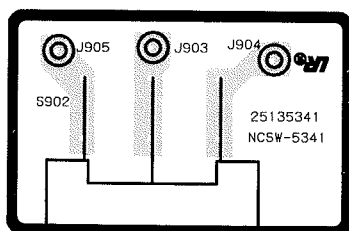
**HEADPONE PC BOARD
(NAETC-5338-4)**



**SWITCH PC BOARD
(NASW-5339-4)**



**POWER SUPPLY PC BOARD
(NAPS-5340-4)**



**SWITCH PC BOARD
(NAETC-5341-4)**

ONKYO CORPORATION

International Sales Div.: 31 Sankyo-bld. 3-8-5, Asakusabashi, Taito-ku, TOKYO 111, JAPAN
TEL : 03-5820-5865 FAX : 03-5820-5869

ONKYO U.S.A. CORPORATION
200 Williams Drive, Ramsey, N.J. 07446, U.S.A.
TEL : 201-825-7950 FAX : 201-825-8150

ONKYO EUROPE ELECTRONICS GmbH
Industriestrasse 18-20, 82110 Germering, GERMANY
TEL : 089 84 93 20 FAX : 089 84 93 226

ONKYO FRANCE
Immeuble Le Diamant, Domaine Technologique de Saclay, 4 Rue Rene Razel, 91892 SACLAY, FRANCE
TEL : (1) 69 33 1400 FAX : (1) 69 41 35 84