

ONKYO® SERVICE MANUAL

CASSETTE TAPE DECK

MODEL TA-R410

Black model

UP	230V AC, 50Hz
Uw	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 PART 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

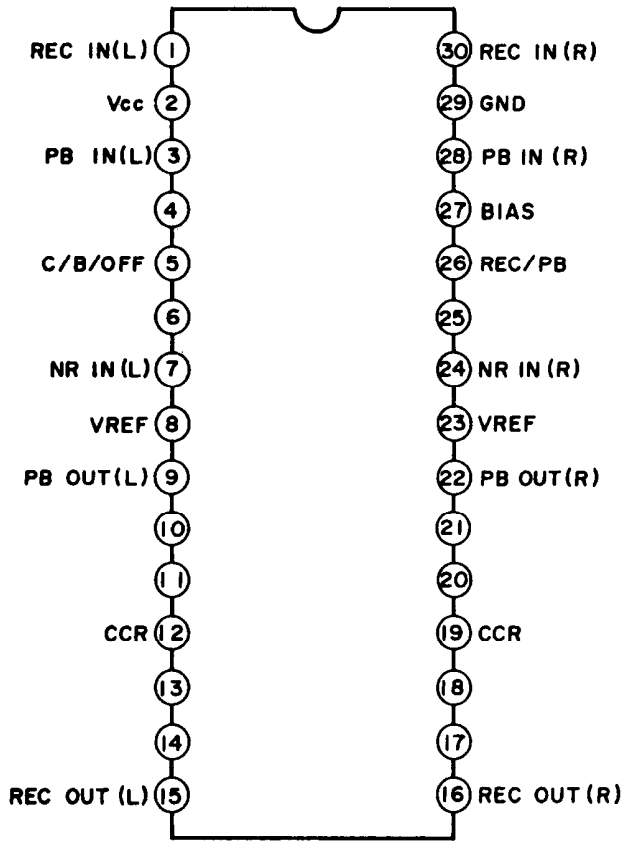
Track Format:	4-tracks, 2-channels
Erasing System:	AC erase
Tape Speed:	4.8 cm/sec. (1-7/8 i.p.s.)
Wow and Flutter:	0.07% (WRMS) 0.09% (DIN)
Frequency Response:	20—16,000Hz (normal) (30—15,000Hz \pm 3dB) 20—17,000Hz (high) (30—16,000Hz \pm 3dB) 20—18,000Hz (metal) (30—17,000Hz \pm 3dB)
S/N Ratio:	58dB (metal tape, Dolby NR off) A noise reduction of 10dB above 5kHz and 5dB at 1kHz is possible with Dolby B NR. A noise reduction of 20dB at 5kHz is possible with Dolby C NR.
Input Jacks:	LINE IN: 2 Input sensitivity: 80 mV Input impedance: 50 kohms
Output Jacks:	LINE OUT: 2 Standard output level: 500 mV (0dB) Optimum load impedance: over 50 kohms Headphone jack: 1 Optimum load impedance: 8 to 200 ohms
Motors:	DC servo motor: 1 DC motor: 1 REC/PB: Special Hard Permalloy \times 1
Heads:	Erase head: Ferrite \times 1
Power Supply Rating:	European models: AC 230 V, 50Hz USA and Canadian models: AC 120V, 60Hz Worldwide models: AC 120 and 220 V, Switchable 60/50 Hz
Power Consumption:	20 watts
Dimensions:	455(W) \times 120(H) \times 311(D)mm 17 7/16" \times 4 7/8" \times 12 1/4"
Weight:	5.0 kg. (11.0 lbs.)

Specifications and external appearance are subject to change without notice because of product improvements.

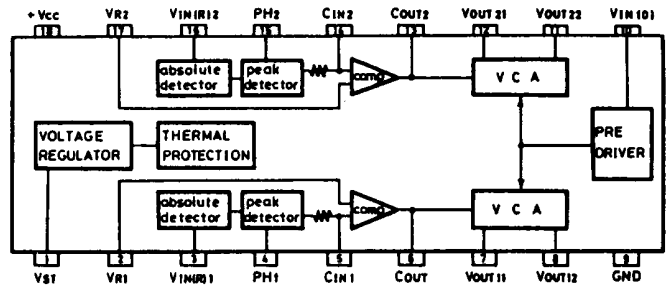
ONKYO
AUDIO COMPONENTS

IC BLOCK DIAGRAM

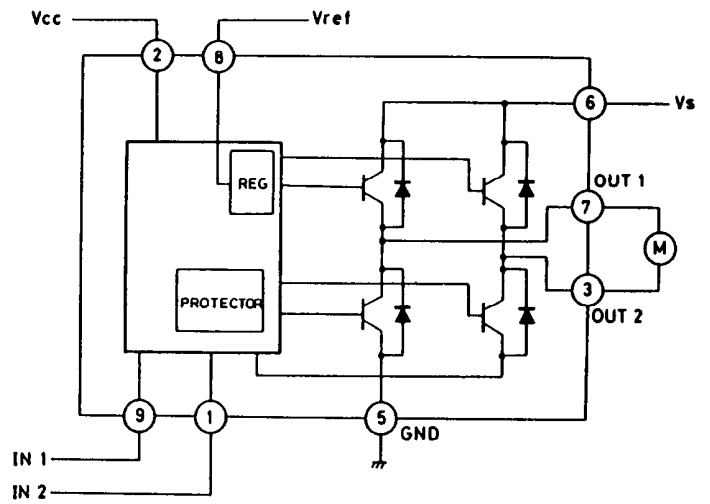
HA12142NT (DOLBY NR)



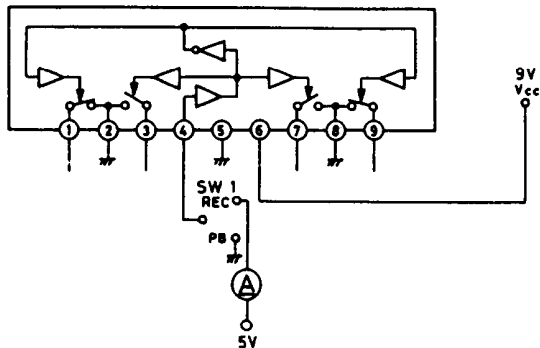
μPC1297CA (HX PRO)



TA7291S (MOTOR DRIVE)

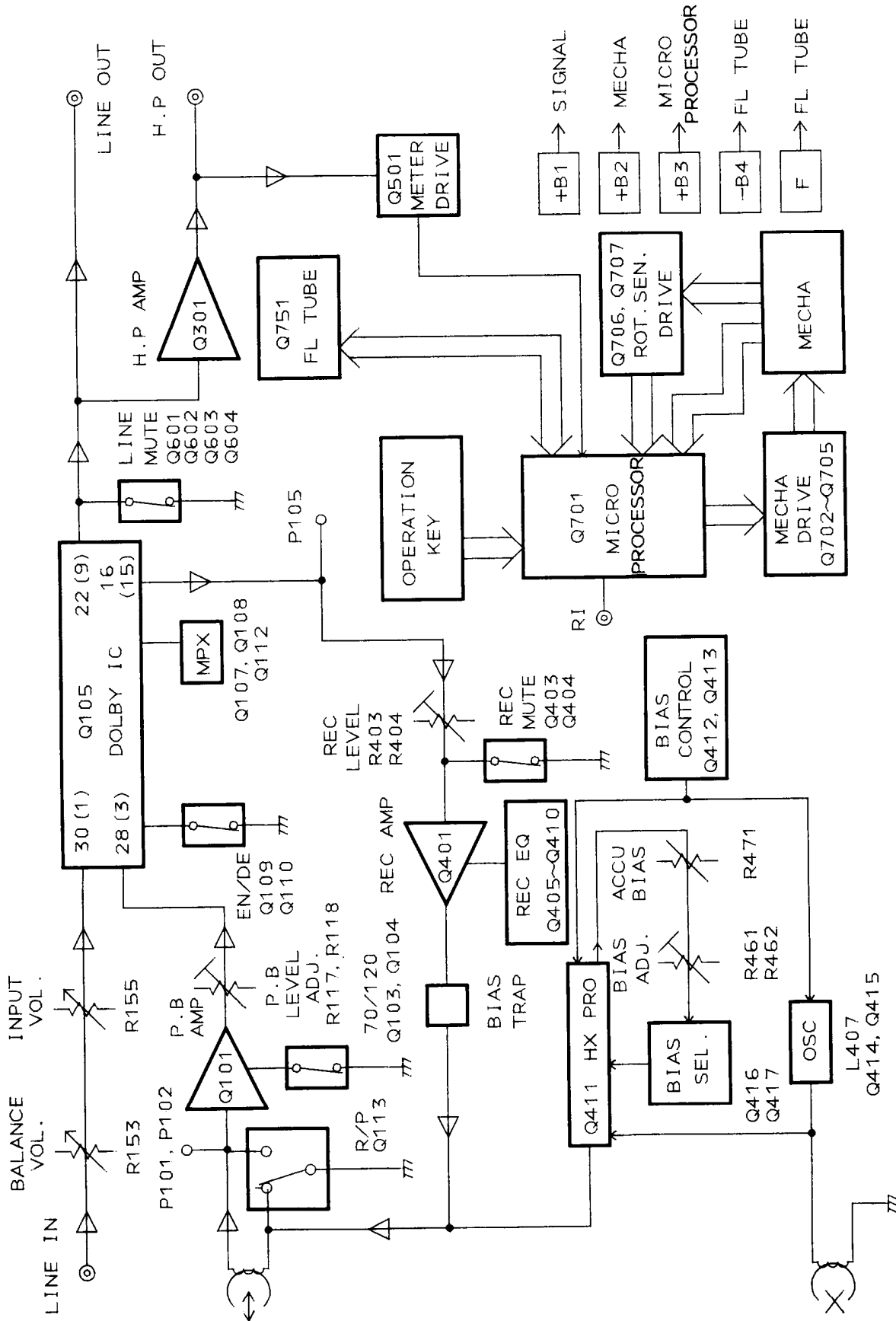


μPC1330HA (REC/PB)



INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

BLOCK DIAGRAM



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.
- Demagnetized record/playback head with a lead 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 in FWD play first, next in REV. Confirm in FWD play azimuth.	
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 will be alive 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 will be alive 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 will be alive when J147 is connected to GND.

Blank tapes

- NORMAL•••UD-1 C-90
- HIGH•••••XL-II C-90
- METAL•••••XS C-90
- PLAY torque•••••30~70g/cm
- FF.REW torque•••••80~180g/cm
- Back tension•••••6~12g/cm
- Head azimuth screw(FWD)
- Head azimuth screw(REV)

Head azimuth screw(FWD)

Head azimuth screw(REV)

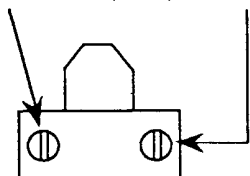


Fig.1 R/P Head

ADJUSTMENT POINT

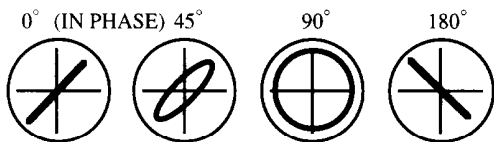
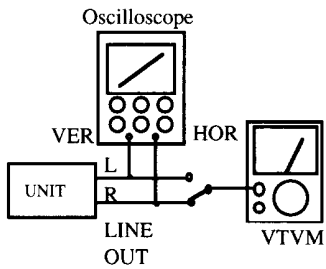
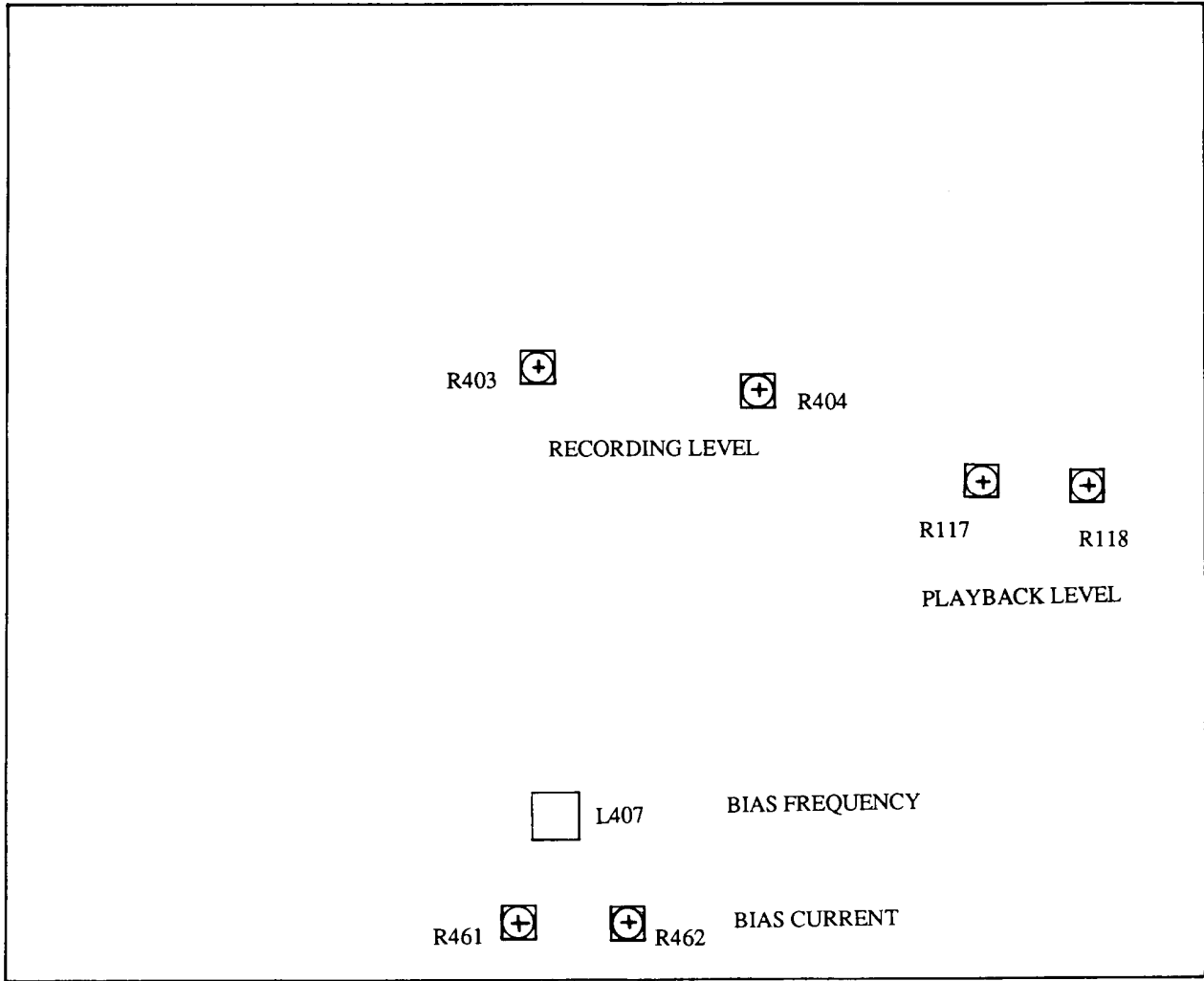


Fig. 1 Confirming phase relationship

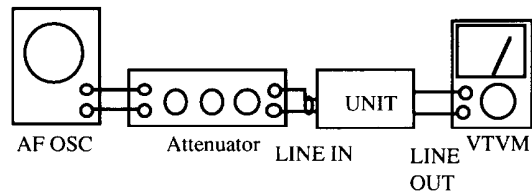
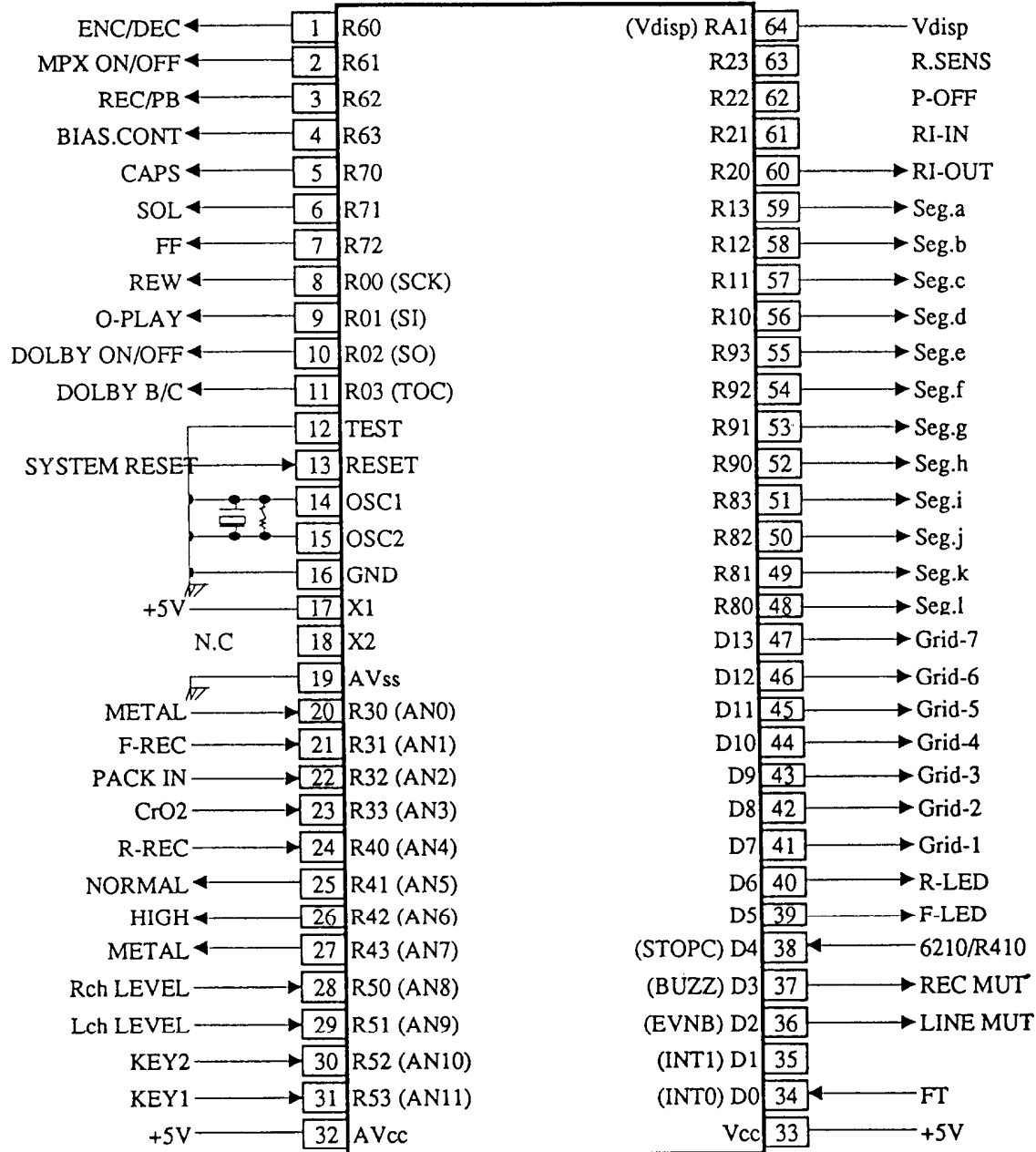


Fig. 2

MICROPROCESSOR CONNECTION DIAGRAM

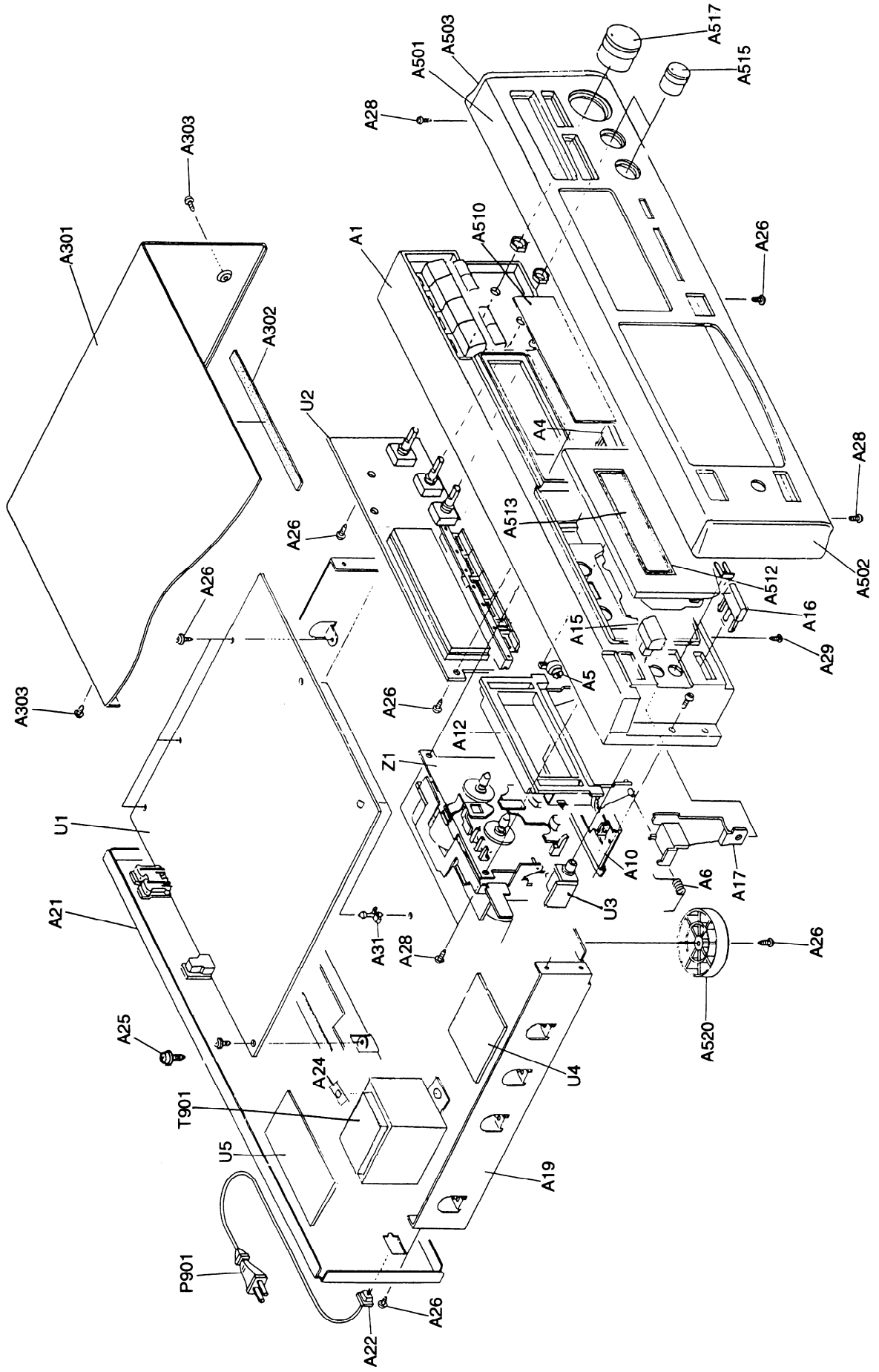
HD404336A33S



MICROPROCESSOR TERMINAL DESCRIPTION

PIN NO.	TERMINAL	I/O	DESCRIPTION
1	ENC/DEC	O	Decorder/Encorder 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
24	R-REC	I	Reverse recording prevention 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
39	F-LED	O	FWD LED lighting output
40	R-LED	O	REV LED lighting output
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

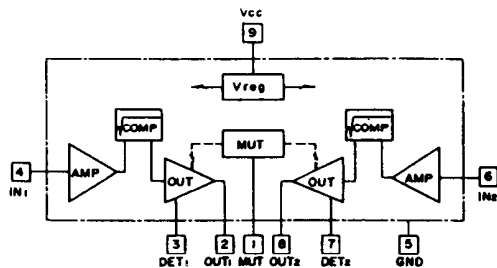
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
A1	27110885Y	Front bracket AS	A512	27301861AY	Cassette lid
A4	28325109Y	Knob (R)	A513	28191704Y	Clear plate (W)
A5	28400282	Damper	A515	28325111Y	Knob (LEV)
A6	27180477A	Spring	A517	28325113Y	Knob (BAL)
A10	27130741Y	Bracket F	A520	27175292Y	Leg AS
A12	27301792AY	Cassette frame AS	A522	838130088Y	3TTB+8B, Screw
A13	27180435	Spring	A523	833430080Y	3TTP+8P(BC), Screw
A15	28324140Y	Knob (PW)	P101A	209990349UJLY	NSAS-14PO486, Socket AS
A16	28323985	Knob (EJ)	P901	△ 253192HITY	AS-UC-6#18, Power supply cord <D>
A17	27273157AY	Joint (EJ)		△ 253193HITY	AS-CEE, Power supply cord <W>
A18	28325110Y	Knob (REV)	T901	△ 2301008Y	NPT-1206D, Power transformer <D>
A19	27100280AY	Chassis		△ 2301010Y	NPT-1206DG, Power transformer<W>
A21	△ 27122056Y	Rear panel <D>	U1	NAAF-5336-2Y	IN214536-1Y,Main circuit PC board ass'y
A22	273000750	Rear panel <W>	U2	NADIS-5337-2Y	IN214537-1Y,Disply circuit PC board ass'y
A24	870065	Cord bushing	U3	NAETC-5338-2Y	IN214538-1Y,Headphone PC board ass'y
A25	830440089Y	PT Washer	U4	NASW-5339-2Y	IN214539-1Y,Switch PC board ass'y <D>
A26	838130088Y	4TTC+8C(BC), Screw	U5	NASW-5339-2AY	IN216539-1Y,Switch PC board ass'y <W>
A28	833430080Y	3TTB+8B, Screw	U6	NAPS-5340-2Y	IN214540-1Y,Power supply PC board ass'y
A29	835430068Y	3TTP+8P(BC), Screw	U7	NAETC-5342-2Y	IN214542-1Y,PC board ass'y
A30	82143006Y	3TTF+6B(BC), Screw	W701	NAETC-5341-2Y	IN216541-1Y,Switch PC board ass'y <W>
A31	27190480-1Y	3P+6FN(BC), Screw	Z1	2047272512Y	NCFC-272512, Fixible flat cable
A301	28184479AY	Holder	Z2	<u>244195Y</u>	Cassette deck mechanism, NDM-186
A302	28140837Y	Top cover		24603415Y	Lever(EJ)
A303	838430088Y	Cushion			
A501	27211698Y	3TTB+8B(BC), Screw			
A502	28125248-6Y	Front panel			
A503	28125249-6Y	End cap (L)			
A504	29110069Y	End cap (R)			
A505	28198778Y	Fixilon tape			
A507	28135199	Facet			
A510	28191705Y	Badge			
		Clear plate			

NOTE: <W> : Worldwide model only
<D> : 120V model only

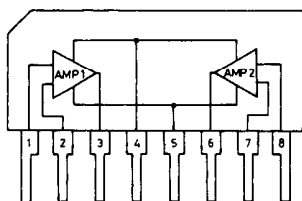
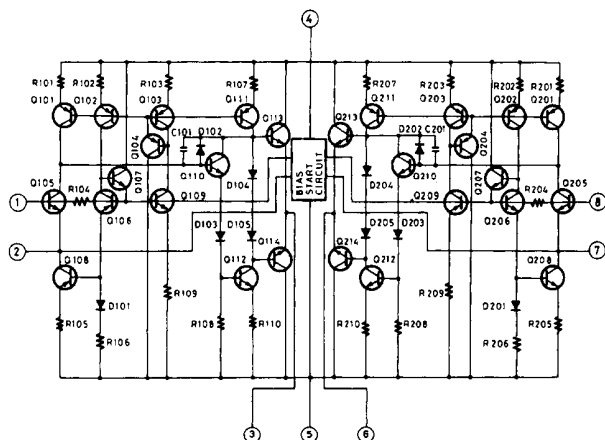
NOTE: THE COMPONENTS IDENTIFIED BY
MARK△ARE CRITICAL FOR RISK OF
FIRE AND ELECTRIC SHOCK. REPLACE
ONLY WITH PART NUMBER SPECIFIED.

IC BLOCK DIAGRAM

BA6138 (METER DRIVER)

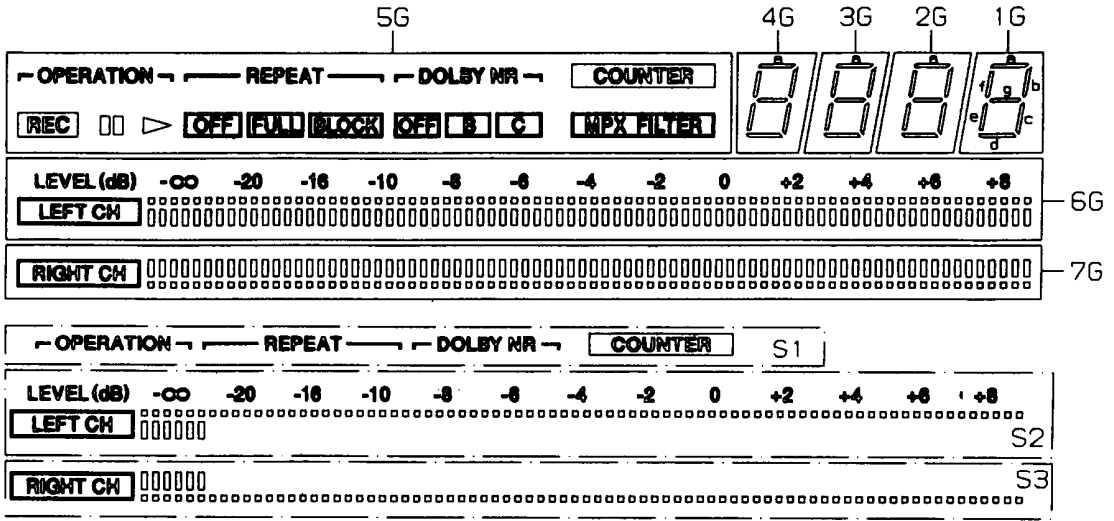


μPC 1228HA (OP AMP)



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

FLUORESCENT INDICATOR TUBE BJ337GK GRID ASSIGNMENT



PIN CONNECTION

PIN NO.	4	4	4	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	0	9	8	7	6	5	4	3	2	1			
CONNECTION	F	F	N	N	P	P	P	P	P	P	P	P	P	P	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	P	P	P	P	P	P	P	N	N	N	F	F
	2	2	P	P	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	4	6	3	6	6	6	6	G	P	P	1	1

- NOTE 1) F1, F2 --- Filament
 2) NP ----- No pin
 3) NC ----- No connection
 4) DL ----- Datum Line
 5) 1G~7G --- Grid

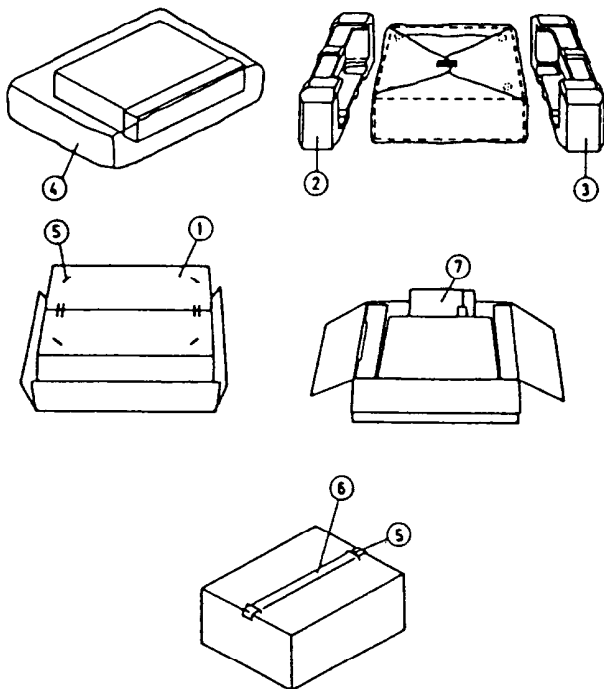
ANODE CONNECTION

	7G	6G	5G	4G	3G	2G	1G
P1	B1	B1	REC	a	a	a	a
P2	B2	B2	□□	b	b	b	b
P3	B3	B3	▷	c	c	c	c
P4	B4	B4	OFF	d	d	d	d
P5	B5	B5	FULL	e	e	e	e
P6	B6	B6	BLOCK	f	f	f	f
P7	B7	B7	OFF	g	g	g	g
P8	B8	B8	B	-	-	-	-
P9	B9	B9	C	-	-	-	-
P10	B10	B10	-	-	-	-	-
P11	B11	B11	-	-	-	-	-
P12	B12	B12	MPX FILTER	-	-	-	-
P13	-	-	S1	-	-	-	-
P14	-	S2	-	-	-	-	-
P15	S3	-	-	-	-	-	-

TAPE MECHANISM-PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
2-2	24601245	Motor reel
3	24611428	Head plate
4	24601283	Main motor
5	24606536	PCB control
18	24602551	Main belt
31	24602541	Pinch roller
32	24602589	Pinch roller
Z2	24603145Y	Lever(EJ)
Z3	24603417Y	Arm(EJ)
Z4	24603418Y	Lever(SB)
Z5	24611612Y	Retainer L
Z6	24611614Y	Retainer R
Z7	24605803Y	Spring
Z8	890301S	Ring(E)
Z9	833126047Y	2.6TTP+4S, Screw
Z10	82212005Y	2S+5F, Screw
Z11	24609074Y	Screw

PACKING VIEW



PARTS LIST

REF NO.	PART NO.	DESCRIPTION
1	29052869	Carton
2	29091636-1BY	Pad (L)
3	29091637-1BY	Pad (R)
4	29100034-1Y	Poly bag 650x850
5	282301Y	Staple
6	29110098Y or 290110071Y	PP Tape or PP Tape
	29365019B	Warranty card <N>
	29361802Y	UPC Label
7	Accessory bag aas'y	
	29342122AY	Instruction manual(E)
	29342123Y	Instruction manual(U3) <C,W>
	29100097-1Y	Poly bag 320x250
	25055040	CV-K-2, Conversion plug <W>
	2010244Y	Pin cord

NOTE: <W> : Worldwide model only
 <D> : 120V model only
 <C> : Canadian model only
 <N> : U.S.A. model only

PRINTED CIRCUIT BOARD - PARTS LIST

Main circuit PC board ass'y (NAAF-5336-2)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs		D909,D910	224451303T	MTZ13C, Zener
Q101	222905	μ PC1228HA	D911	224450562T	MTZ5.6B, Zener
Q105	22240388	HA12142NT	D912-D914	223163T	1SS133
Q113	22240147	μ PC1330HA	D915	224452204T	MTZJ22D, Zener
Q201	222811	NJM4558D-D	D916	224450562T	MTZ5.6B, Zener
Q301,Q401	22240369	M5218AP	D917	224450433T	MTZ4.3C, Zener
Q411	222959	μ PC1297CA			
Q501	22240313	BA6138		Coils	
Q701	22240866	HD404336A, 33S	L101,L102	233436	NMC-6081, MPX COIL
Q702	22240239	TA7291S	L401,L402	231084	NCH-2132, CHOKE COIL
Q904	222780055NEC	MPC78M05AHF	L403,L404	231085	NCH-2133, CHOKE COIL
			L405,L406	231218	NCH-4453, CHOKE COIL
			L407	231223	NLO-2064, OSC COIL
			X701	3010150T	CST4.00MGW, CERA ROCK
	Transistors			Capacitors	
Q103,Q104	221281T	DTC114YS	C101,C102	374726814T	ECQ-B50V, 681J, TF C
Q107-Q112	221281T	DTC114YS	C103,C104	354780229T	CE04W50V, 2.2M, ELECT C
Q403,Q404	2213285T or 2213284T	2SC1740S-S or 2SC1740S-R	C105,C106	374721015T	ECQ-B50V, 101K, TF C
Q405-Q410	221281T	DTC114YS	C109,C110	374721034T	ECQ-B50V, 103J, TF C
Q412	2211504T	2SA950-Y	C111,C112	354744709T	CE04W16V, 47M, ELECT C
Q413	221281T	DTC114YS	C113,C114	354761009T	CE04W35V, 10M, ELECT C
Q414,Q415	2201883T	2SC1213-C	C115,C116	374721834T	ECQ-B50V, 183J, TF C
Q416,Q417	221281TY	DTC114YS	C117	354744719T	CE04W16V, 470M, ELECT C
Q601	2213355T or 2213354T	2SA933S-S or 2SA933S-R	C119,C120	374723915T	ECQ-B50V, 391K, TF C
Q602	221281T	DTC114YS	C121-C124	354780229T	CE04W50V, 2.2M, ELECT C
Q603,Q604	2211705T or 2211706T	2SD655-E or 2SD655-F	C125	354780109T	CE04W50V, 1M, ELECT C
Q703	221281T	DTC114YS	C127,C128	374722224T	ECQ-B50V, 222J, TF C
Q704,Q705	2211705T or 2211706T	2SD655-E or 2SD655-F	C129,C130	354761009T	CE04W35V, 10M, ELECT C
Q706	2213285T or 2213284T	2SC1740S-S or 2SC1740S-R	C131-C136	374722224T	ECQ-B50V, 222J, TF C
Q707	221281T	DTC114YS	C137-C140	374721044T	ECQ-V50V, 104J, TF C
Q708-Q902	2213285T or 2213284T	2SC1740S-S or 2SC1740S-R	C141,C142	354741019T	CE04W16V, 100M, ELECT C
Q903	2202724 or 2202725	2SB1569A-D or 2SB1569A-E	C145,C146	354761009T	CE04W35V, 10M, ELECT C
Q905,Q906	2213285T or 2213284T	2SC1740S-S or 2SC1740S-R	C147	354744719T	CE04W16V, 470M, ELECT C
Q907	2202724	2SB1569A-D	C148	354742219T	CE04W16V, 220M, ELECT C
Q908	2213355T or 2213354T	2SA933S-S or 2SA933S-R	C149,C150	354741019T	CE04W16V, 100M, ELECT C
Q909	2213090T	DTA114YS	C151,C152	354761009T	CE04W35V, 10M, ELECT C
Q910	221281T	DTC114YS	C201,C202	354780479T	CE04W50V, 4.7M, ELECT C
	Diodes		C203,C204	374721015T	ECQ-B50V, 101K, TF C
D601-D606	223163T	1SS133	C205,C206	374721024T	ECQ-B50V, 102J, TF C
D701	224450752T	MTZ7.5B, Zener	C207-C209	354761009T	CE04W35V, 10M, ELECT C
D702	224450472T	MTZ4.7B, Zener	C210	354742219T	CE04W16V, 220M, ELECT C
D703,D704	223163T	1SS133	C301,C302	354761009T	CE04W35V, 10M, ELECT C
D705	224450562T	MTZ5.6B, Zener	C305,C306	354741019T	CE04W16V, 100M, ELECT C
D901,D902	22380046T	AM01Z	C307,C308	354761009T	CE04W35V, 10M, ELECT C
D903,D905	22380035T	GP104003E	C403,C404	374722224T	ECQ-B50V, 222J, TF C
D904,D906	22380046T	AM01Z	C405,C406	354761009T	CE04W35V, 10M, ELECT C
D907,D908	223163T or 223205TY	1SS133 or 1SS270A	C407,C408	354744709T	CE04W16V, 47M, ELECT C
			C409,C410	353781099T	CE04W50V, 0.1M, ELECT C
			C411,C412	354761009T	CE04W35V, 10M, ELECT C
			C413,C414	374721015T	ECQ-B50V, 101K, TF C
			C415,C416	374724714T	ECQ-B50V, 471J, TF C
			C417,C418	374721834T	ECQ-B50V, 183J, TF C
			C419,C420	374724724T	ECQ-B50V, 472J, TF C
			C421-C424	374724734T	ECQ-V50V, 473J, TF C
			C425	354742219T	CE04W16V, 220M, ELECT C
			C427,C428	374721034T	ECQ-B50V, 103J, TF C
			C429,C430	374724714T	ECQ-B50V, 471J, TF C
			C431-C434	374722734T	ECQ-V50V, 273J, TF C

CIRCUIT NO.	PART NO.	DESCRIPTION
C435,C436	370131014T	APS100V, 101J, APS C
C437,C438	370131514T	APS100V, 151J, APS C
C439	374722734T	ECQ-V50V, 273J, TF C
C440,C443	354780479T	CE04W50V, 4.7M, ELECT C
C444	354722219T	CE04W6.3V, 220M, ELECT C
C445,C446	374723324T	ECQ-B50V, 332J, TF C
C447	374721034T	ECQ-B50V, 103J, TF C
C448	370138224T	APS100V, 822J, APS C
C450,C451	354761009T	CE04W35V, 10M, ELECT C
C452	354741019T	CE04W16V, 100M, ELECT C
C501,C502	354780479T	CE04W50V, 4.7M, ELECT C
C503,C504	354780109T	CE04W50V, 1M, ELECT C
C505	354741019T	CE04W16V, 100M, ELECT C
C601	354780479T	CE04W50V, 4.7M, ELECT C
C602	374721044T	ECQ-V50V, 104J, TF C
C606,C607	354780109T	CE04W50V, 1M, ELECT C
C608	354780109T	CE04W50V, 1M, ELECT C
C701,C709	354761009T	CE04W35V, 10M, ELECT C
C705,C903	354741019T	CE04W16V, 100M, ELECT C
C901	374721044T	ECQ-V50V, 104J, TF C
C902	393156827S	CE04W25V, 6800M, FM C
C904	354761009T	CE04W35V, 10M, ELECT C
C905	354742219T	CE04W16V, 220M, ELECT C
C907	354780229T	CE04W50V, 2.2M, ELECT C
C909	393354727S	CE04W25V, 4700M, VX C
C908,C910	354741019T	CE04W16V, 100M, ELECT C
C911	374722734T	CE04W16V, 1000M, ELECT C
C912	354762209T	ECQ-V50V, 273J, TF C
C913	354780229T	CE04W35V, 22M, ELECT C
C916	354761019T	CE04W50V, 2.2M, ELECT C
C918	354784709T	CE04W35V, 100M, ELECT C
C919	354780479T	CE04W50V, 47M, ELECT C
C920,C921	354780229T	CE04W50V, 4.7M, ELECT C
C922	354744709T	CE04W50V, 2.2M, ELECT C
C925	354761009T	CE04W16V, 47M, ELECT C
C926	374722734T	CE04W35V, 10M, ELECT C
C927	374721044T	ECQ-V50V, 273J, TF C
C928,C929	374721044T	ECQ-V50V, 104J, TF C

CIRCUIT NO.	PART NO.	DESCRIPTION
R117,R118	5210265TY	N06HR, 50KBC, TRIM R
R403,R404	5210262T	N06HR, 10KBC, TRIM R
R447,R465	453530824T	RNU1/2WCJ, 8.2, METAL R
R461,R462	5210262T	N06HR, 10KBC, TRIM R
R702	443524704T	RM1/10IJ, 3.9K*5, R NET
R712	49163104409	RS1/2WBJ, 47, METAL O R
R726	49163104410	RM1/10IJ, 100K*9, R NET
R727	453534794T	RM1/10IJ, 100K*10, R NET
R903	453530224T	RNU1/2WCJ, 0.47, METAL R
R907	443521004T	RNU1/2WCJ, 2.2, METAL R
R908	443524714T	RS1/2WBJ, 10, METAL O R
R911,R915	443521004T	RS1/2WBJ, 470, METAL O R
R923	453530104T	RNU1/2WCJ, 1, METAL R

CIRCUIT NO.	PART NO.	DESCRIPTION
P101	25045329	NPLG-6P120,Pin plug
P102	25050267	NPJ-4PDBL183,Pin jack
P105	25055038	NPLG-2P29,Pin plug
P401	25050267	NPLG-2P116,Pin plug

CIRCUIT NO.	PART NO.	DESCRIPTION
P701	25050967 or 25051099	NSCT-27P654,Socket or NSCT-27P754,Socket
P706	25051101 27190713	NPJ-2PDBL184,Jack 3TTB+10S(BC),Screw UAMS-11-0,Holder

Display circuit PC board ass'y (NADIS-5337-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
Transistors		
Q751	212139	BJ337GK, FL Tube
D751	225292DT	SEL4310G-D, LED
D752	225292DT	SEL4310G-D, LED
Resistors		
R153	5104289*	N14RGLC250K, MN17Z, Variable resistor
R155	5104251	N14RGL50K, A17Z, Variable resistor
R471	5104290	N14RGLC5K, B17Z, Variable resistor
Sockets,Switches,Holder		
P751	25050891 or 25050933	NSCT-27P686, Socket or NSCT-27P720, Socket
S771-S782	25035652T	NPS-111-S604, Power switch
S783	25035514	NPS-122-L476, Power switch
S784	25035652T 27190838A	NPS-111-S604, Power switch HOLDER

Headphone PC board ass'y (NAETC-5338-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
Pin jack		
P301	25045255Y	YKB21-5009, JACK

Switch PC board ass'y (NASW-5339-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
Switch		
P901	25035636	NSP-111-L590P,Power switch

Power supply PC board ass'y (NAPS-5340-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
Plug		
P951	△ 25055676	NPLG-2P632,Pin plug

Switch PC board ass'y (NAETC-5341-2)

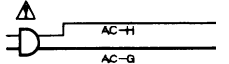
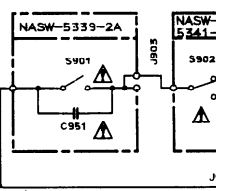
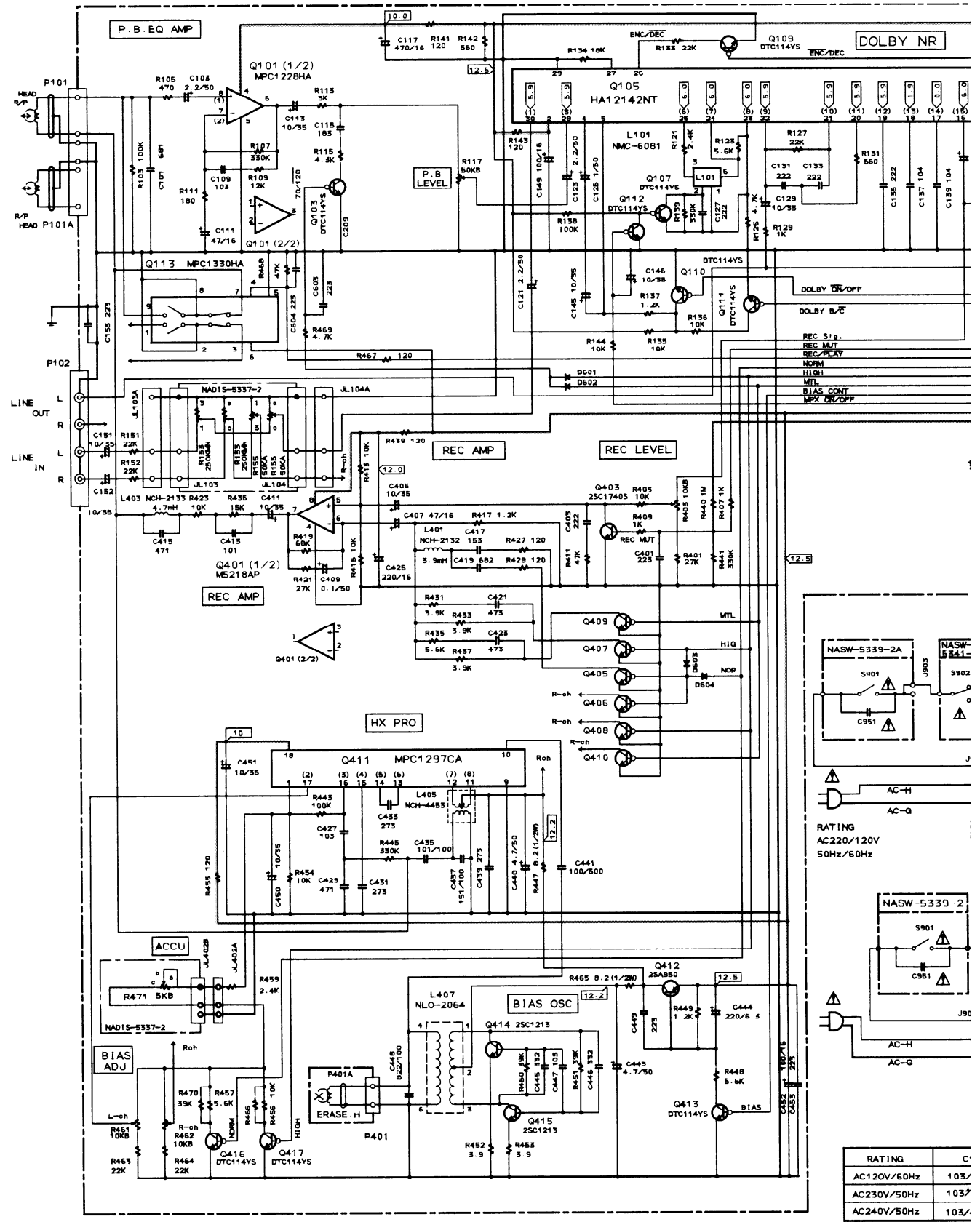
CIRCUIT NO.	PART NO.	DESCRIPTION
Switch		
S902	△ 25065437	NSS-22157P,Slide switch

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

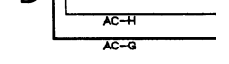
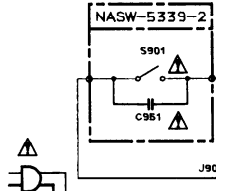
A B C D

SCHEMATIC DIAGRAM 1/2

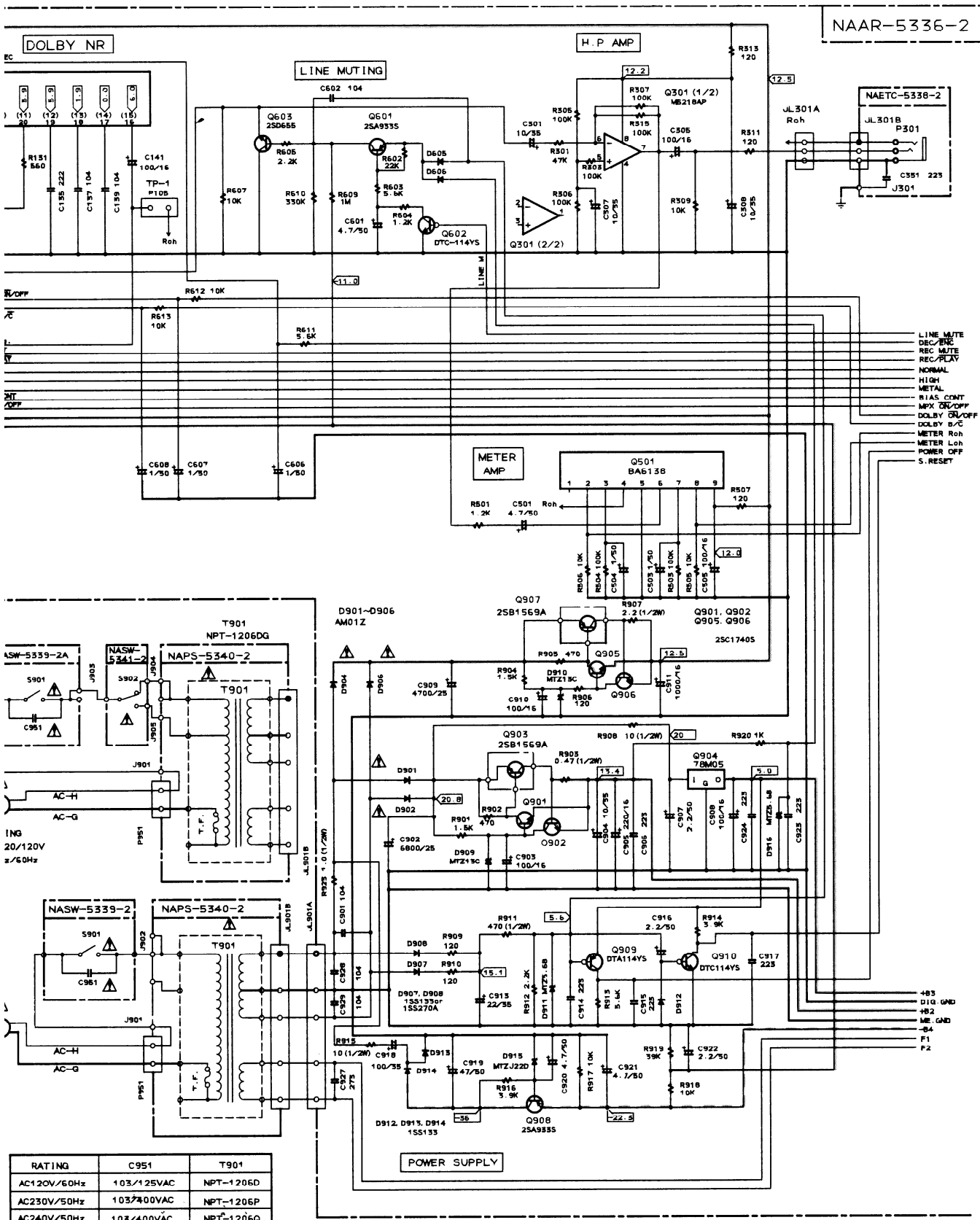
1
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3
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5



RATING
AC220V/120V
50Hz/60Hz



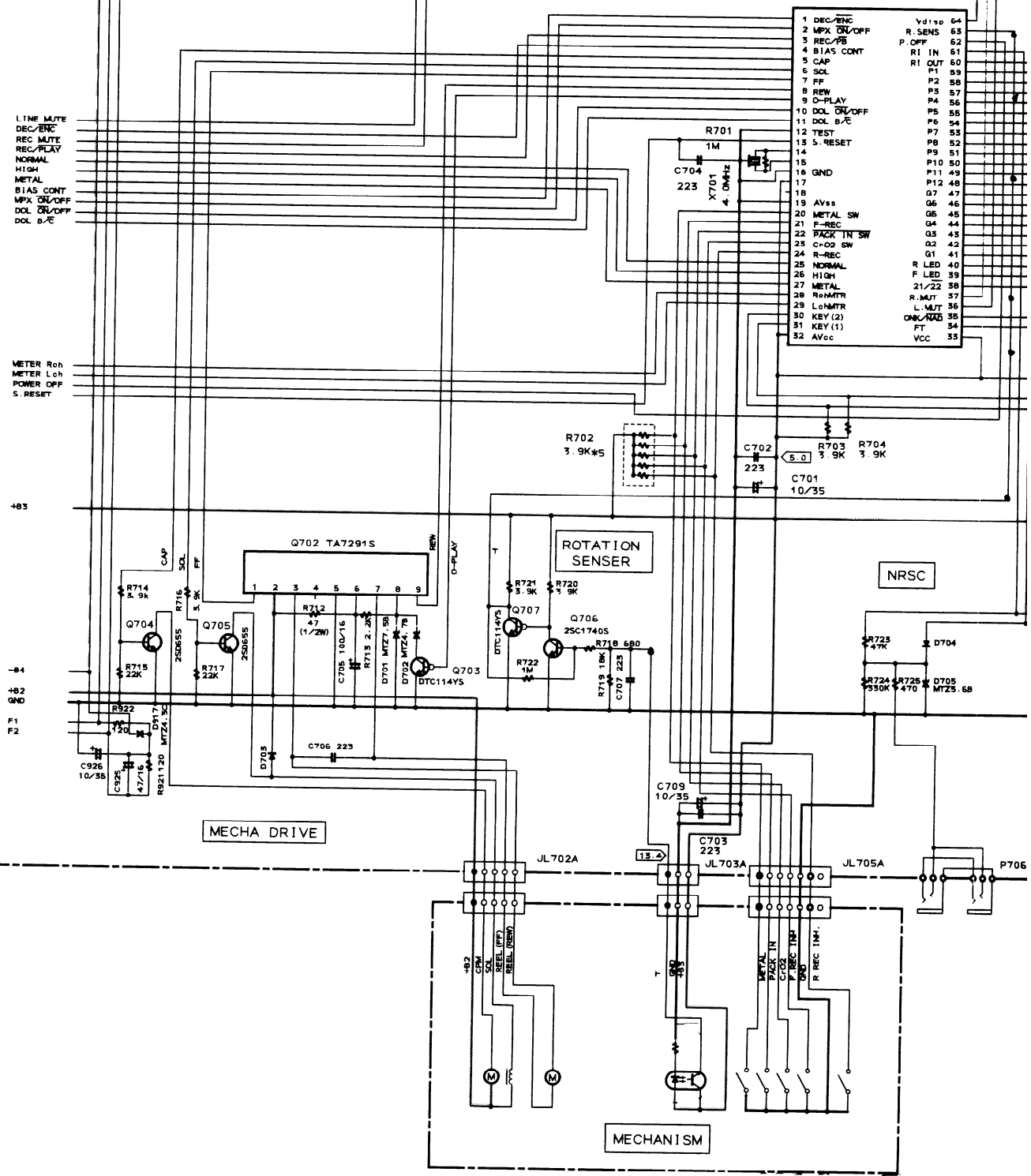
RATING
AC120V/60Hz 103/
AC230V/50Hz 103/
AC240V/50Hz 103/



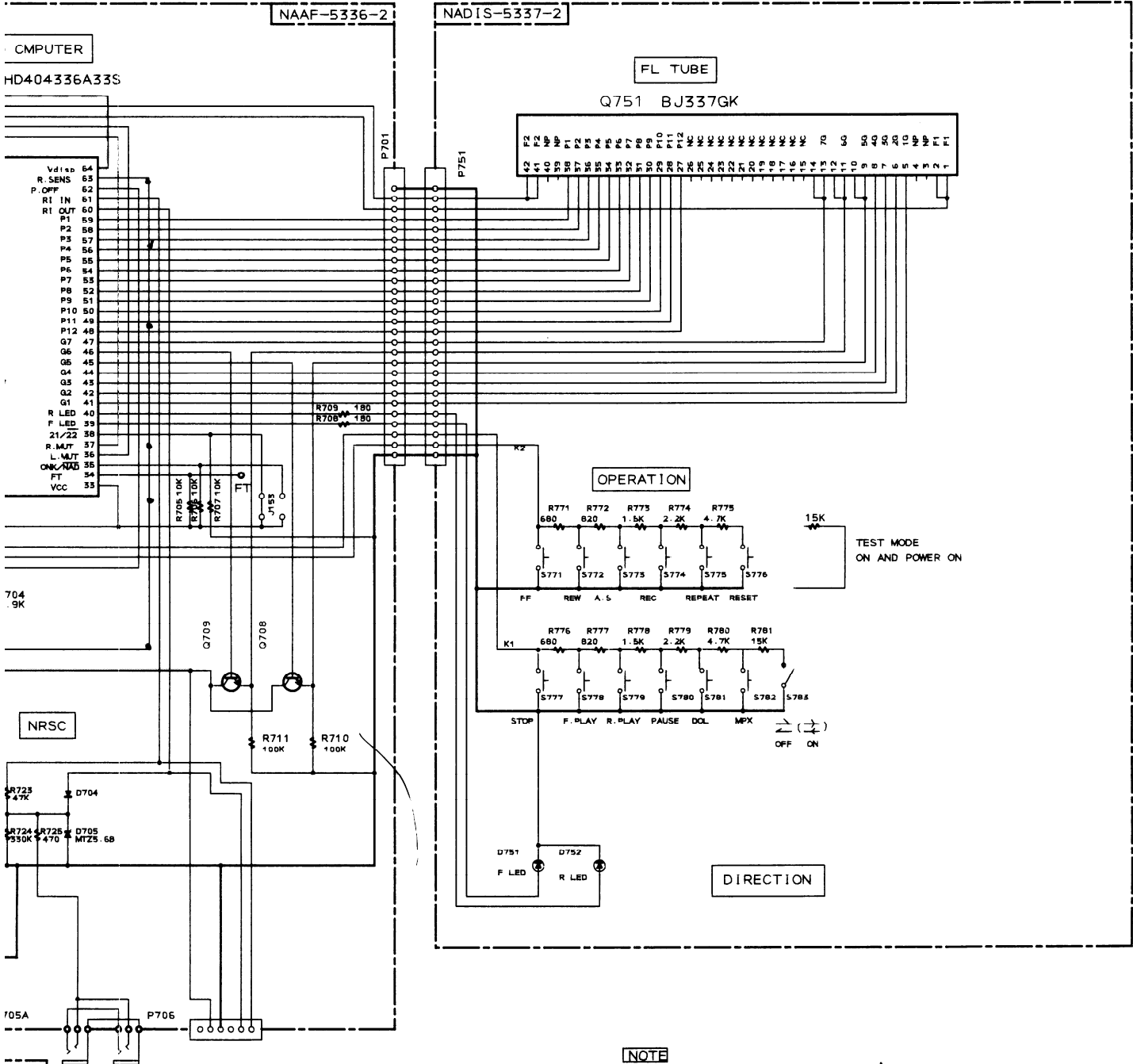
RATING	C951	T901
AC120V/60Hz	103/125VAC	NPT-1206D
AC230V/50Hz	103/200VAC	NPT-1206P
AC240V/50Hz	103/400VAC	NPT-1206Q

SCHEMATIC DIAGRAM 2/2

MICRO COMPUTER
Q701 HD404336A33S



D E F G



- NOTE**
- THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
 - VOLTAGE (MEASURED WITH VOLTMETER) C IS DC VOLTAGE (NO INPUT SIGNAL)
 - ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA933S UNLESS OTHERWISE NOTED.
 - ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1740S UNLESS OTHERWISE NOTED.
 - ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
 - ELECTROLYTIC CAPACITORS (E) ARE IN μ F/VV.
 - ALL CAPACITORS ARE IN pF/50V UNLESS OTHERWISE NOTED.
 - EX) 3pF-090, 33pF-350, 330pF-331, 0, 033 μ F-333
 - ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
 - THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
 - EX) \square PRINTING SIDE
 - CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

ONKYO CORPORATION

Sales & Product Planning Div.: 2-1, Nisshin-cho, Neyagawa-shi, OSAKA 572, JAPAN
Tel: 0720-31-8111 Fax: 0720-33-5222

ONKYO U.S.A. CORPORATION

200 Williams Drive, Ramsey, N.J. 07446, U.S.A.
Tel: 201-825-7950 Fax: 201-825-8150

ONKYO DEUTSCHLAND GMBH ELECTRONICS

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 René Razel,
91892 SACLAY, FRANCE Tel:(1) 69 33 14 00 Fax:(1) 69 41 35 84

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