

# SERVICE MANUAL

**NAD**

## SERVICE SAFETY PRECAUTIONS (UL)

1. Use exact replacement parts for critical locations marked "⚠"
2. Return lead dress to original position and re-install protective covers.
3. Before returning to customer, test for shock hazard; use either method A or B:
  - A. Leakage test "cold":
    1. Unplug the AC cord; turn power switch ON.
    2. Connect one lead of High Voltage Insulation Tester to both prongs of the AC plug.
    3. Touch other lead to all exposed metal parts.
    4. Impedance measurement must be 0.3-5.0 Megohms.
  - B. Leakage test, "live":
    1. Plug unit directly into the AC outlet: do not use isolation transformer.
    2. Connect one lead of the Leakage Current Tester to earth ground.
    3. Touch other lead to all exposed metal parts.
    4. Leakage measurement must be less than 0.5 milliamps.

**613**

CASSETTE TAPE DECK

**613**  
CASSETTE TAPE DECK

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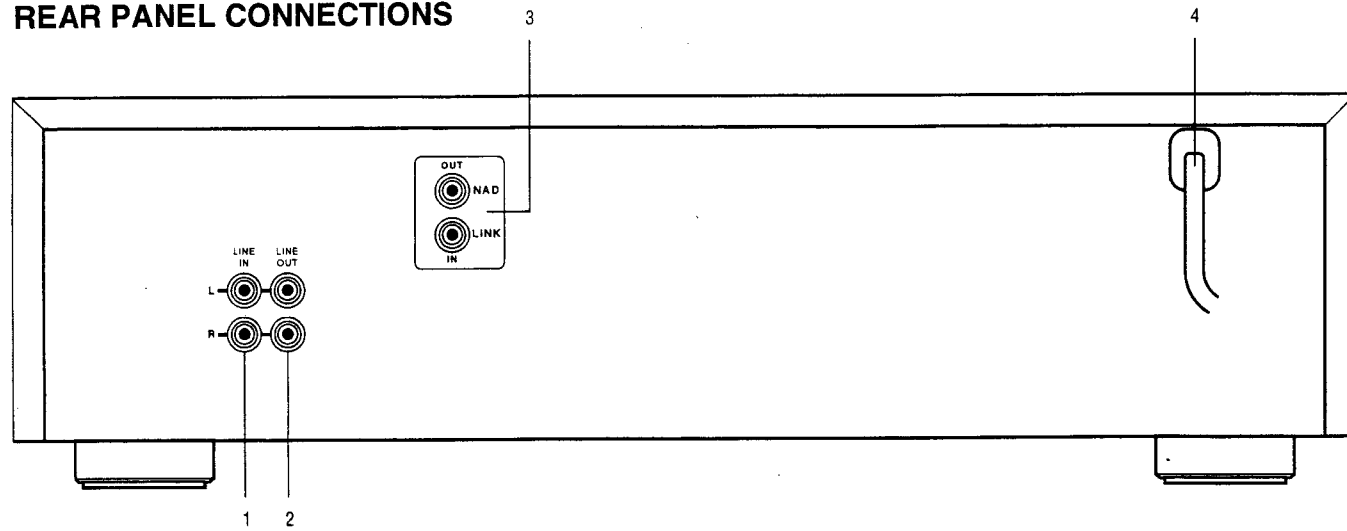
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## SERVICE SAFETY PRECAUTIONS

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    1. Plug unit directly into AC outlet; do not use isolation transformer.
    2. Connect one lead of Leakage Current Tester to earth ground.
    3. Touch other lead to all exposed metal parts.
    4. Leakage measurement must be less than 0.5 milliamps.

**WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE**

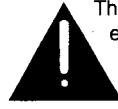
**REAR PANEL CONNECTIONS**



- 1. INPUT.
- 2. OUTPUT.
- 3. NAD LINK.
- 4. POWER.

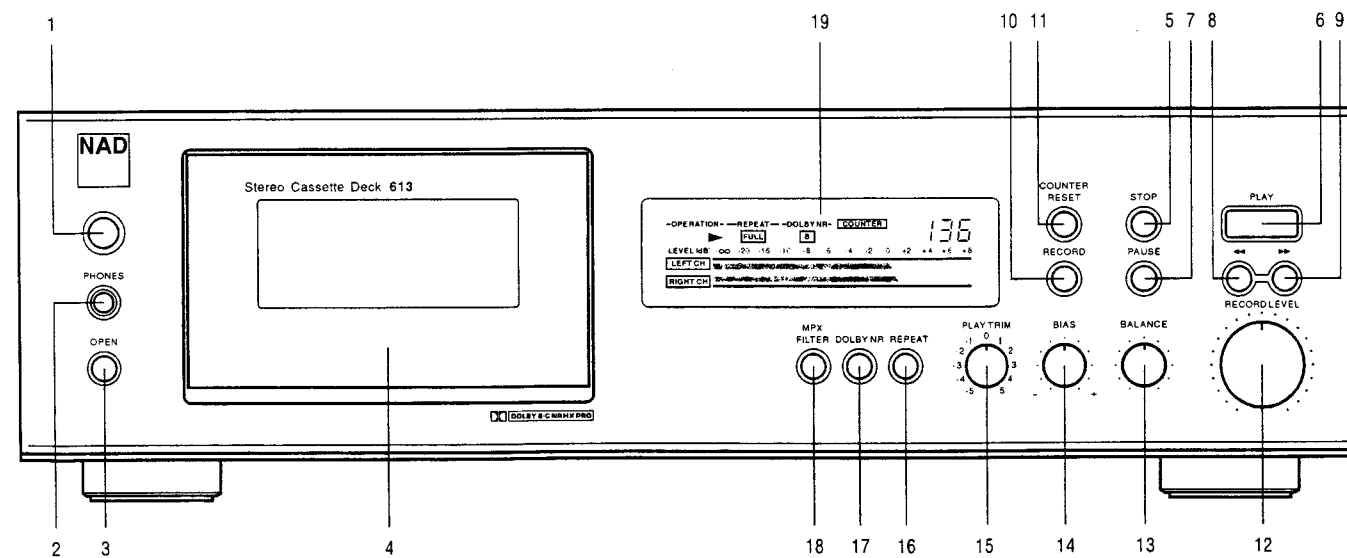


The lightning flash with arrowhead, within an equilateral triangle is intended to alert the user of the presence of un-insulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance

**FRONT PANEL CONTROLS**



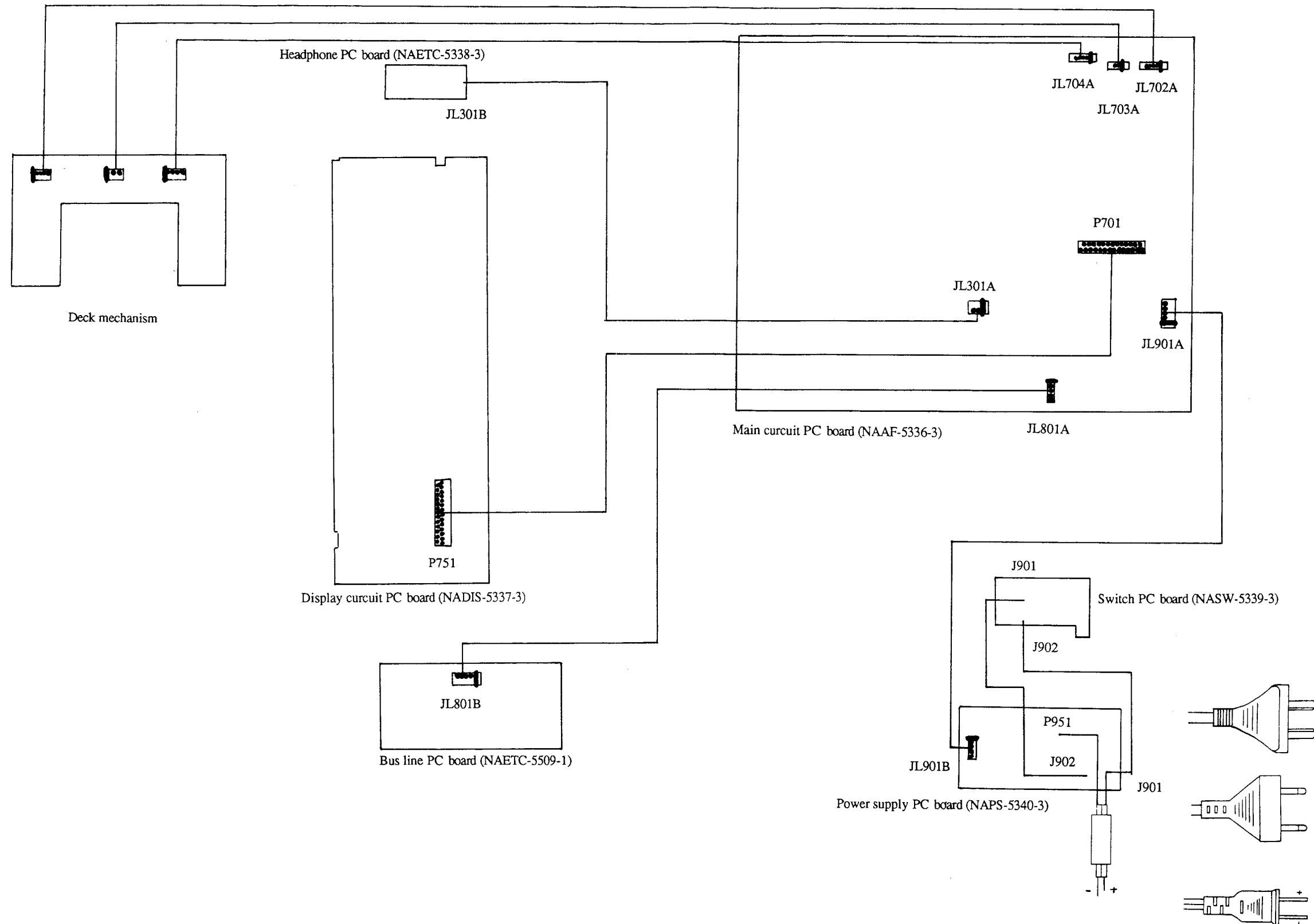
- 1. POWER.
- 2. PHONES.
- 3. OPEN
- 4. CASSETTE COMPARTMENT
- 5. STOP.
- 6. PLAY.
- 7. PAUSE.
- 8. REWIND.
- 9. FAST FOWARD
- 10. RECORD.
- 11. RESET.
- 12. RECORD LEVEL.
- 13. BALANCE.
- 14. BIAS.
- 15. PLAY TRIM.
- 16. REPEAT.
- 17. DOLBY NR.
- 18. MPX FILTER.
- 19. DISPLAY

**SPECIFICATIONS**

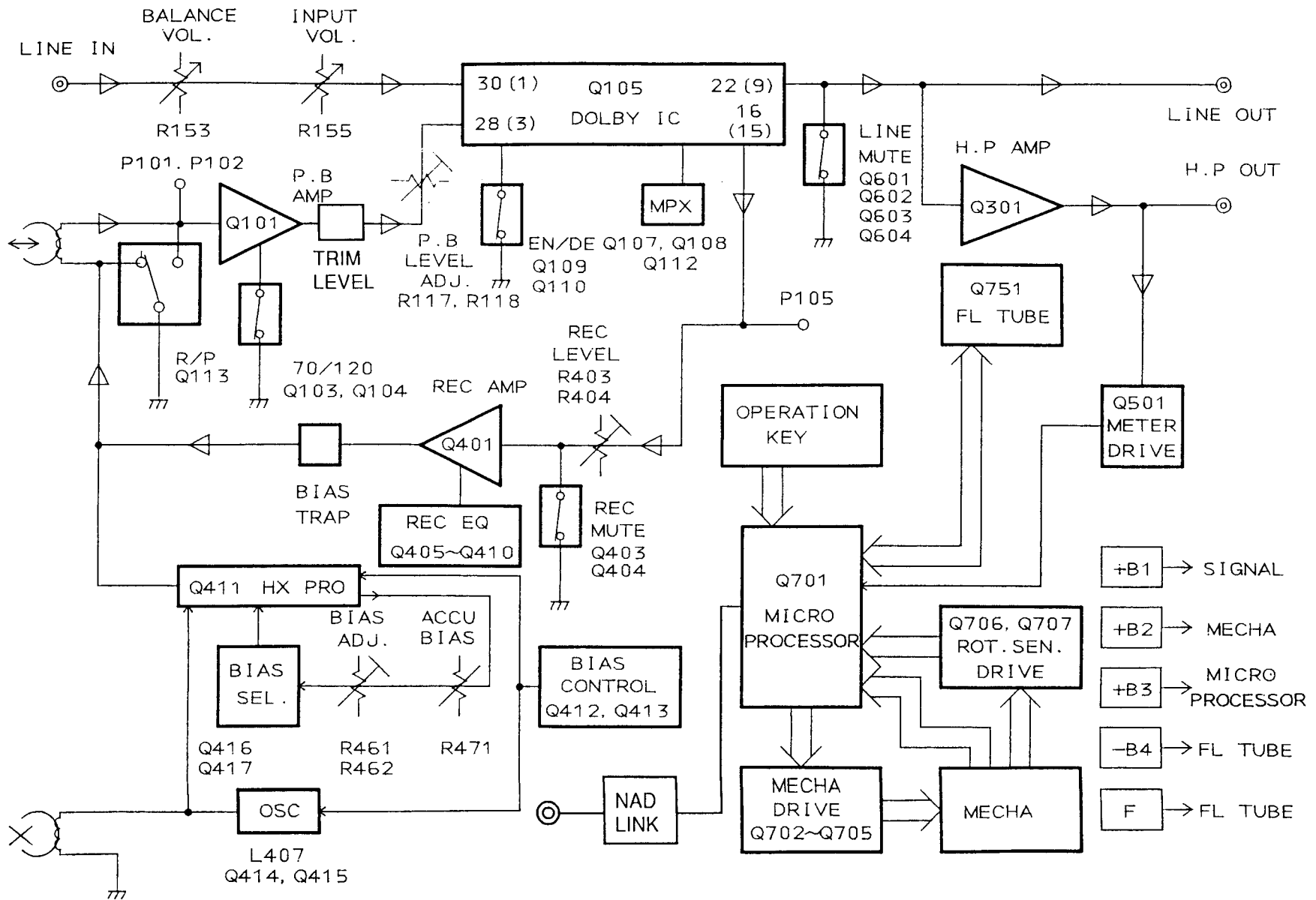
- Track Format: 4-tracks, 2-channels
- Erasing System: AC erase
- Tape Speed: 4.8 cm/sec. (1-7/8 i.p.s.)
- Wow and Flutter: 0.07% (WRMS)  
0.09% (DIN)
- Frequency Response: 20—17,000Hz (normal)  
(30—16,000Hz ± 3dB)  
20—18,000Hz (high)  
(30—17,000Hz ± 3dB)  
20—19,000Hz (metal)  
(30—18,000Hz ± 3dB)
- 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
- Heads: REC/PB: Special Hard Permalloy × 1  
Erase head: Ferrite × 1
- Power Supply Rating: European models:  
AC 230 V, 50Hz  
USA and Cadadian models:  
AC 120V, 60Hz
- Power Consumption: 230V/0.12A 120V/0.24A
- Dimensions: 435(W) × 125(H) × 290(D)mm
- Weight: 5.0 kg. (11.0 lbs.)

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

# WIRING DIAGRAM



# 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 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.2	Fig.1	Maximum level & Minimum phase error at channels L and R	Fig.3
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 active when J147 is connected to GND.
5	Bias current Fig.4	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 active when J147 is connected to GND.
6	Recording level Fig.4	1kHz 350mV	NORMAL TAPE	REC/PB	AC voltmeter	R403 (L.ch) R404 (R.ch)	Same level at REC/PB	FT mode will be active 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.

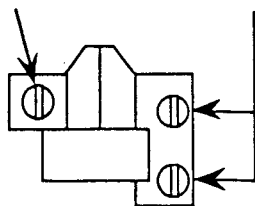
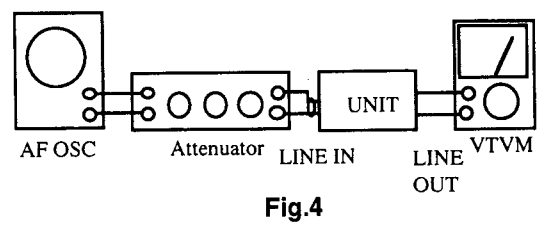
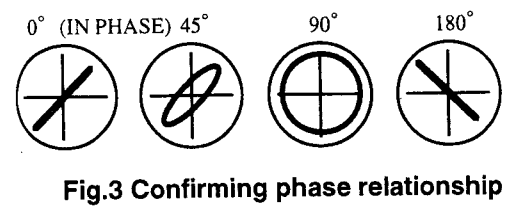
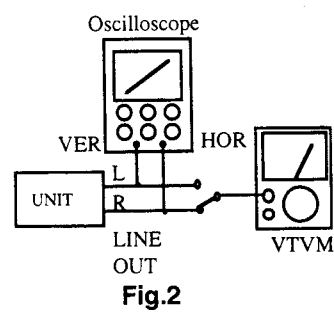
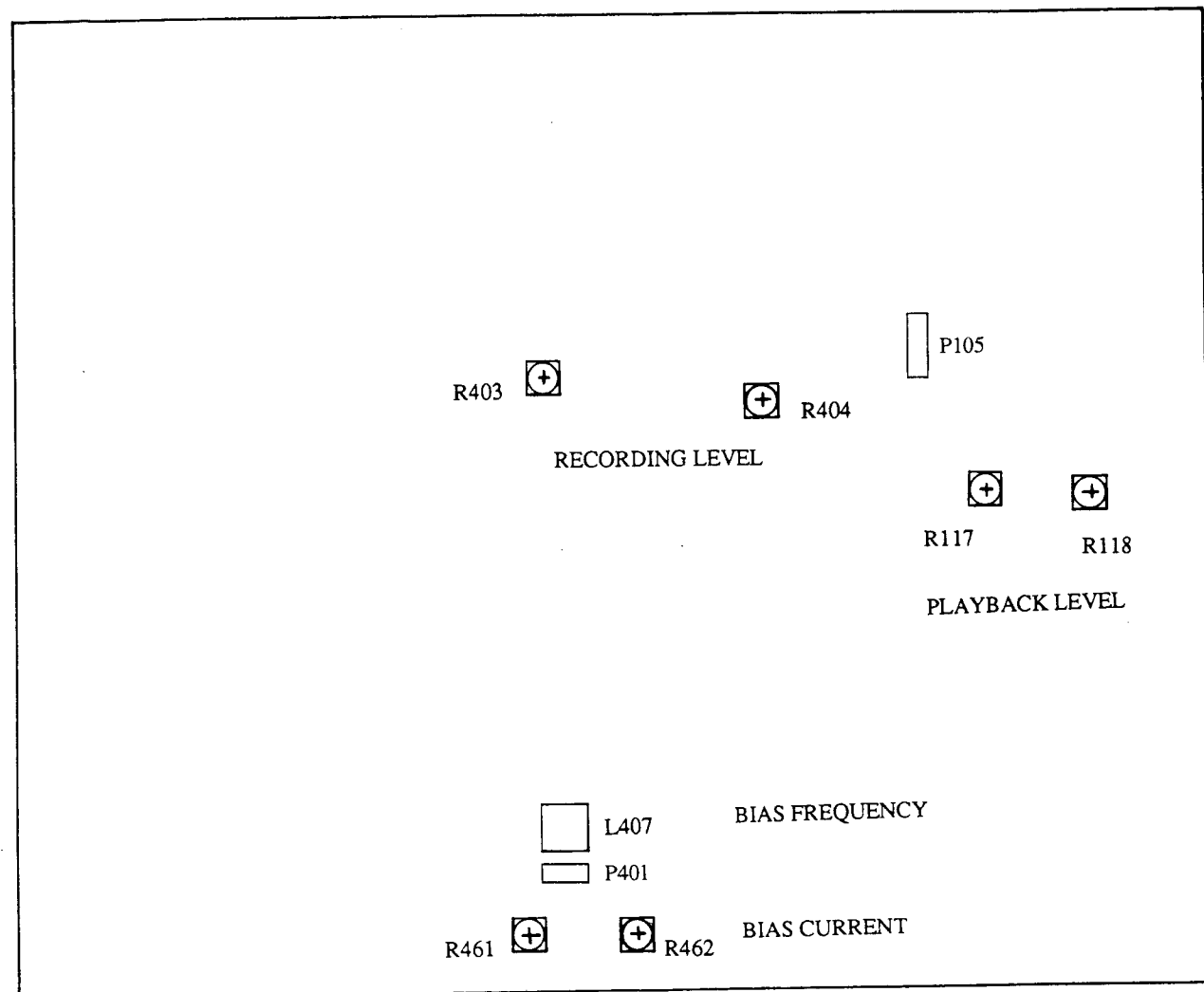


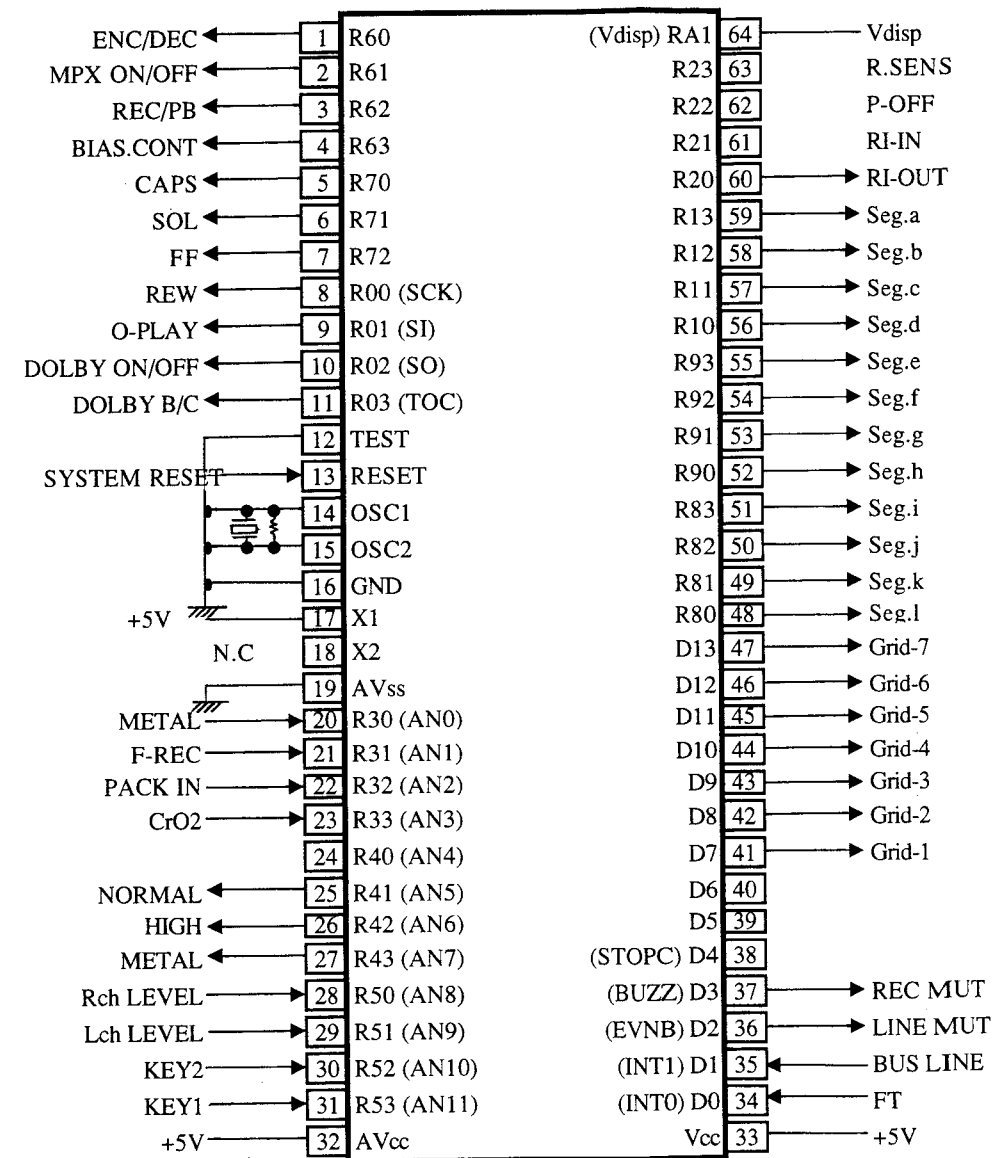
Fig.1 R/P Head

### ADJUSTMENT POINT



### MICROPROCESSOR CONNECTION DIAGRAM

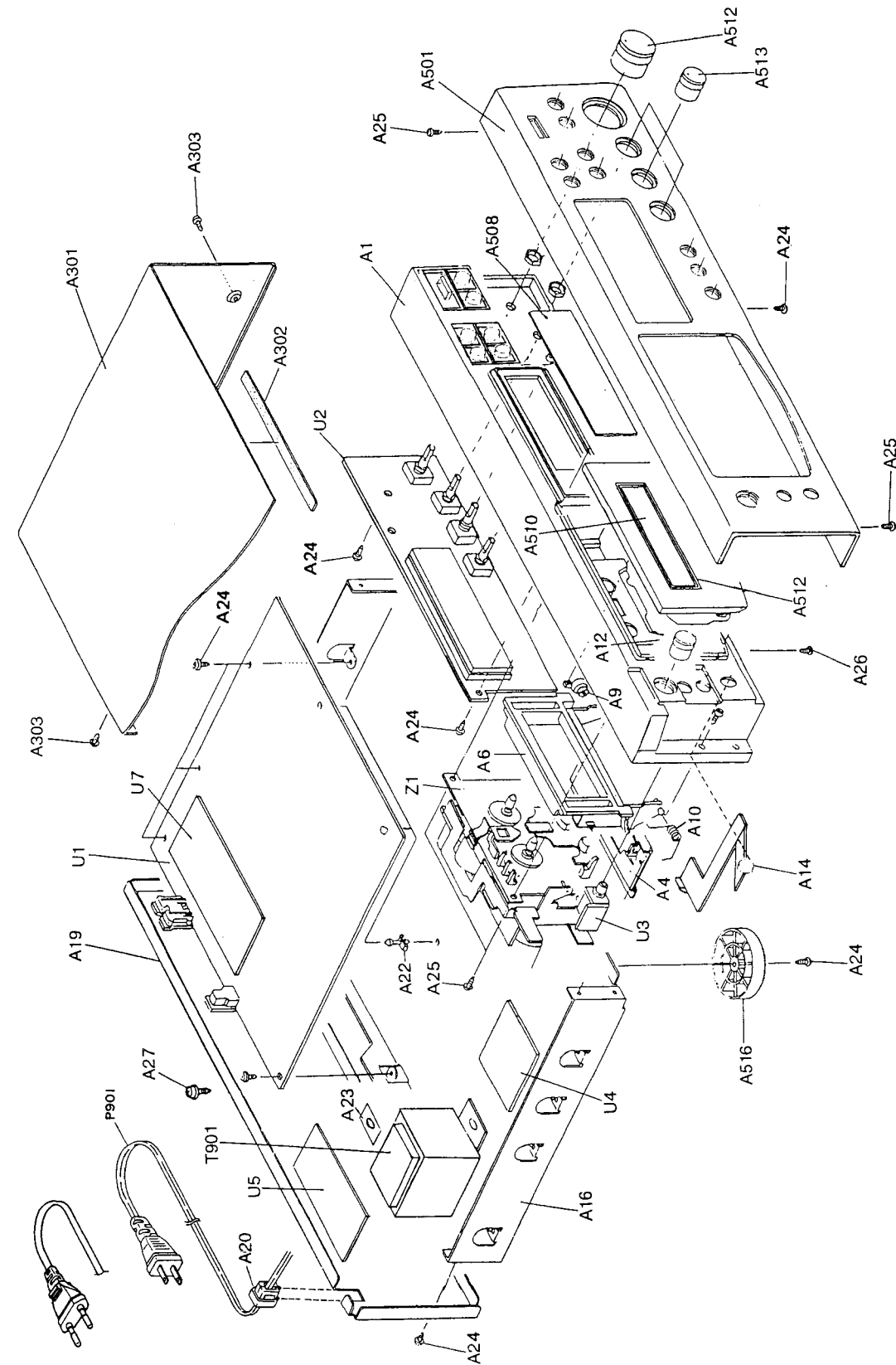
#### HD404336A33S



# MICROPROCSSOR 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	
26	HIGH	O		On at the high level
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	
35	BUS LINE	I	Initializing input for Bus line	
36	LINE MUT	O	Line muting output	
37	REC MUT	O	Recording muting 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

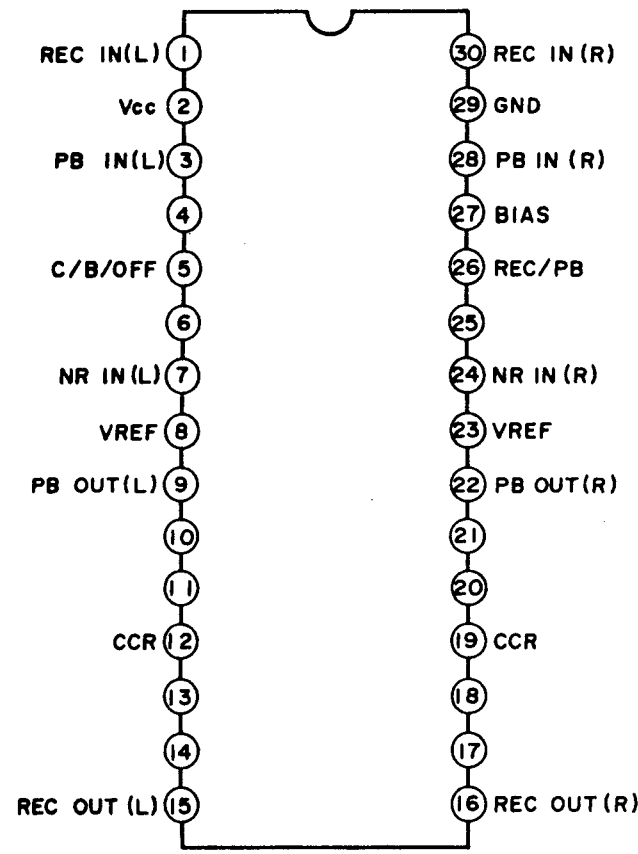
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
A1	27110881Y	Front bracket AS	A510	28191713Y	Clear plate
A4	27130741Y	Bracket F	A512	28325111Y	Knob(LEV)
A6	27301792AY	Cassette frame AS	A513	28325113Y	Knob(BAL)
A7	27180435	Spring	A516	27175305Y	Leg AS
A9	28400282	Damper	A518	838130088Y	3TTB+8B, Screw
A10	27180476A	Spring	A519	833430080Y	3TTP+8P(BC), Screw
A12	28325125Y	Knob(PW)	A520	838430088Y	3TTB+8B(BC), Screw
A14	28325127AY	knob(EJ)	P101A	2009900356LULY	NSAS-6P0493, Socket AS
A16	27100295AY	Chassis	P401A	2009900359LULY	NSAS-6P0496, Socket AS
A17	27130747Y	Bracket	P901	253192HIT	△ AS-UC-6#18, Power supply cord <AH>
A19	27122075AY	Rear panel <AH>		253198HIT	△ AS-BS, Power supply cord <B>
A20	27122076Y	Rear panel <B,B1,C>		253197HIT	△ AS-SAA, Power supply cord <B1>
A22	27300750	Cord bushing		253193HIT	△ AS-CEE Power, supply cord <C>
A23	27190480-1Y	Holder	T901	2301008Y	△ NPT-1206D, Power transformer <AH>
A24	870065	PT Washer		2301009Y	△ NPT-1206P, Power transformer <B,B1,C>
A25	838130088Y	3TTB+8B,Screw	U1	IN218536-3Y	NAAF-5336-3, Main circuit PC board ass'y
A26	833430080Y	3TTP+8P(BC),Screw	U2	IN218537-3Y	NADIS-5337-3, Display circuit PC board ass'y
A27	835430068Y	3TTF+6B(BC),Screw	U3	IN218538-3Y	NAETC-5338-3, Headphone PC board ass'y
A28	830440089Y	4TTC+8C(BC),Screw	U4	IN218539-3Y	NASW-5339-3, Switch PC board ass'y
A301	82143006Y	3P+6FN(BC),Screw	U5	IN218540-3Y	NAPS-5340-3, Power supply PC board ass'y
A302	28184587AY	Top cover	U6	IN218542-3Y	NAETC-5342-3, PC board ass'y
A303	28140837Y	Cushion	U7	IN218509-3Y	NAETC-5509-1, Switch PC board ass'y
A501	838430088Y	3TTB+8B(BC),Screw	W701	2047272512Y	NCFC7-272512, Flexible flat cable
A503	27211713AY	Front panel	Z1	244194Y	Cassette deck mechanism, NDM-185
A504	27267859Y	Guide	Z2	24603419Y	Lever(EJ)
A507	27267860Y	Guide			
A508	27301866Y	Cassette lid			
	28191715Y	Clear plate			

NOTE: <AH> : U.S.A., Canadian model only  
 <B> : U.K. model only  
 <B1> : Australian model only  
 <C> : European model only

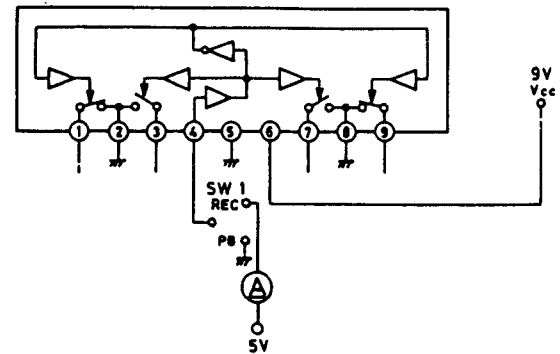
NOTE: THE COMPONENTS IDENTIFIED BY MARK △ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK REPLACE ONLY WITH PART NUMBER SPECIFIED.

## IC BLOCK DIAGRAM

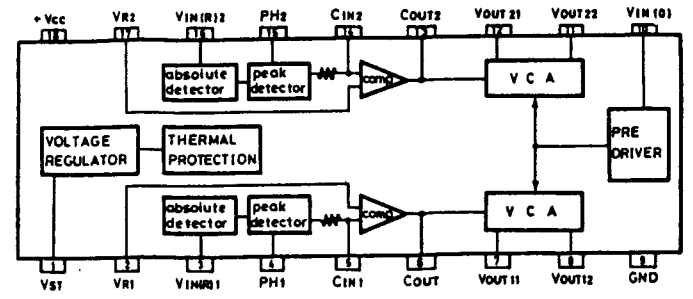
### HA12142NT (DOLBY NR)



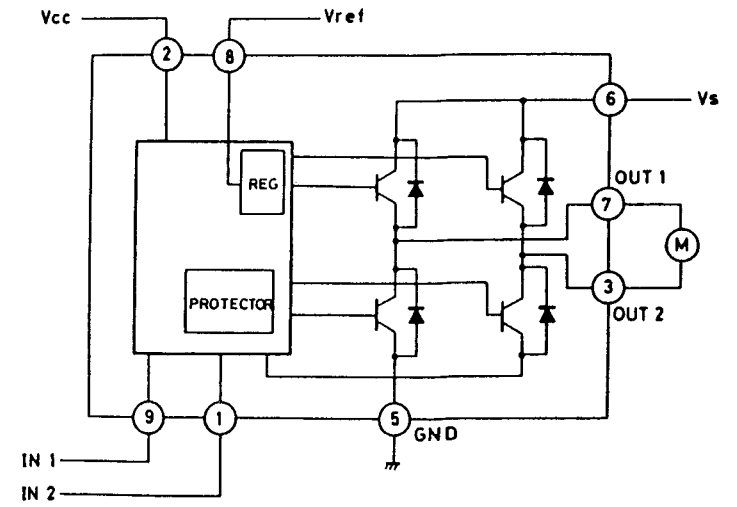
### μPC1330HA (REC/PB)



### μPC1297CA (HX PRO)



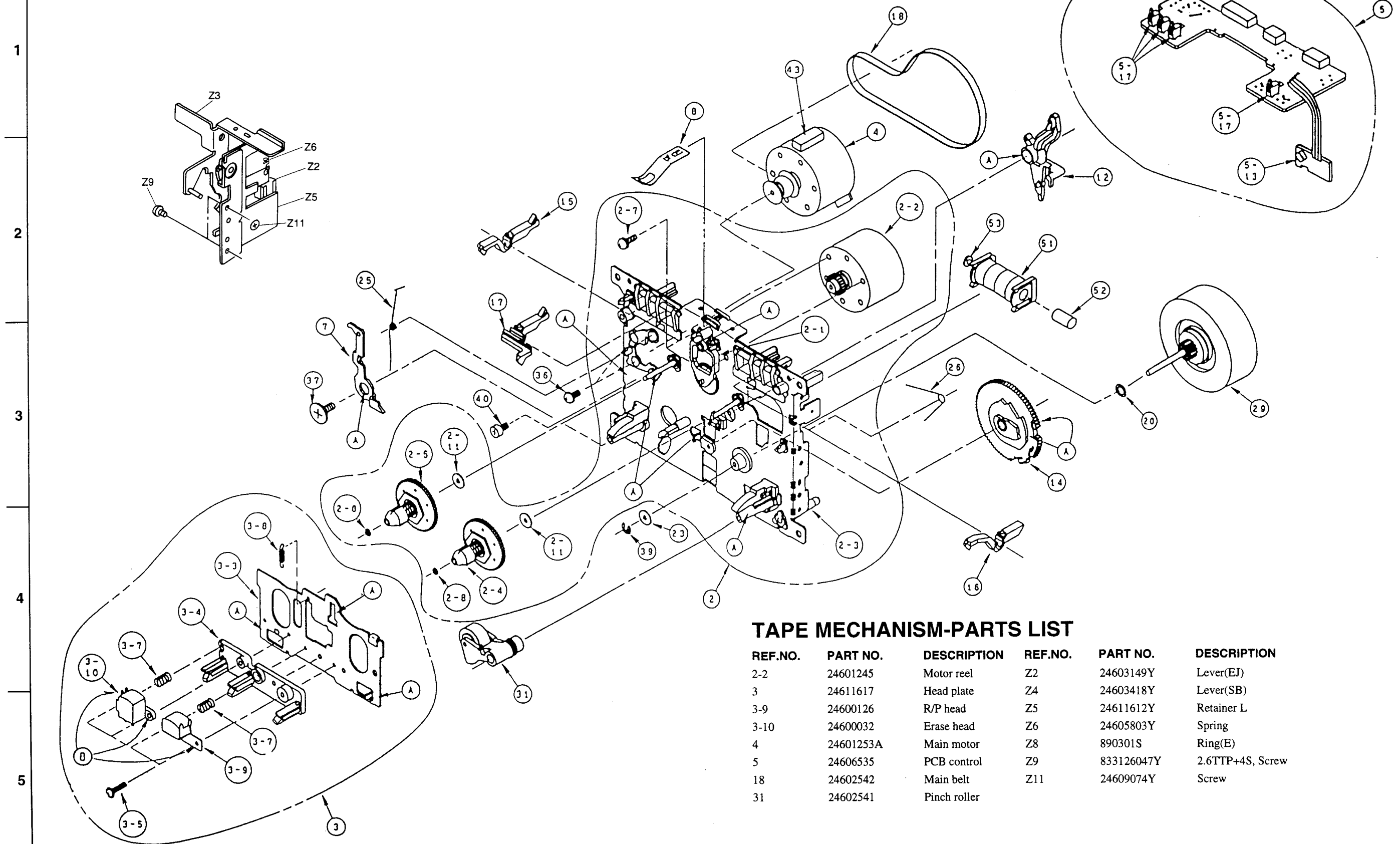
### TA7291S (MOTOR DRIVE)



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



# TAPE MECHANISM-EXPLODED VIEW



## TAPE MECHANISM-PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
2-2	24601245	Motor reel	Z2	24603149Y	Lever(EJ)
3	24611617	Head plate	Z4	24603418Y	Lever(SB)
3-9	24600126	R/P head	Z5	24611612Y	Retainer L
3-10	24600032	Erase head	Z6	24605803Y	Spring
4	24601253A	Main motor	Z8	890301S	Ring(E)
5	24606535	PCB control	Z9	833126047Y	2.6TTP+4S, Screw
18	24602542	Main belt	Z11	24609074Y	Screw
31	24602541	Pinch roller			

# PRINTED CIRCUIT BOARD-PARTS LIST

## Main circuit PC board ass'y (NAAF-5336-3)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q101	222905	μPC1228HA
Q105	22240388	HA12142NT
Q113	22240147	μPC1330HA
Q201	222811	NJM4558D-D
Q301,Q401	22240369	M5218AP
Q411	222959	μPC1297CA
Q501	22240313	BA6138
Q701	22240866	HD404336A33S
Q702	22240239	TA7291S
Q904	222780055NEC	MPC78M05AHF
	Transistors	
Q103,Q104	221281	DTC114YS
Q107-Q112	221281	DTC114YS
Q403,Q404	2213285 or 2213284	2SC1740S-S or 2SC1740S-R
Q405-Q410	221281	DTC114YS
Q412	2211504	2SA950-Y
Q413	221281	DTC114YS
Q414,Q415	2201883	2SC1213-C
Q416,Q417	221281Y	DTC114YS
Q601	2213355 or 2213354	2SA933S-S or 2SA933S-R
Q602	221281	DTC114YS
Q603,Q604	2211705 or 2211706	2SD655-E or 2SD655-F
Q703	221281	DTC114YS
Q704,Q705	2211705 or 2211706	2SD655-E or 2SD655-F
Q706	2213285 or 2213284	2SC1740S-S or 2SC1740S-R
Q707	221281	DTC114YS
Q708-Q902	2213285 or 2213284	2SC1740S-S or 2SC1740S-R
Q903	2202724 or 2202725	2SB1569A-D or 2SB1569A-E
Q905,Q906	2213285 or 2213284	2SC1740S-S or 2SC1740S-R
Q907	2202724 2202725	2SB1569A-D 2SB1569A-E
Q908	2213355 or 2213354	2SA933S-S or 2SA933S-R
Q909	2213090	DTA114YS
Q910	221281	DTC114YS
	Diodes	
D601-D606	223163	ISS133
D701	224450752	MTZ7.5B, Zener
D702	224450472	MTZ4.7B, Zener
D703	223163	ISS133
D901,D902	22380046	AM01Z
D904,D906	22380046	AM01Z
D907,D908	223163 or 223205Y	ISS133 or ISS270A
D909,D910	224451303	MTZ13C, Zener
D911	224450562	MTZ5.6B, Zener
D912-D914	223163	ISS133

## CIRCUIT NO.

D915	224452204
D916	224450562
D917	224450433
	Coils
L101,L102	233436
L401,L402	231084
L403,L404	231085
L405,L406	231218
L407	231223
X701	3010150T
	Capacitors
C101,C102	374726814
C103,C104	354780229
C109,C110	374721034
C111,C112	354744709
C113,C114	354761009
C115,C116	374721834
C117	354744719
C121-C124	354780229
C125	354780109
C127,C128	374722224
C129,C130	354761009
C131-C136	374722224
C137-C140	374721044
C141,C142	354741019
C145,C146	354761009
C149	354741019
C151,C152	354761009
C201,C202	354780479
C203,C204	374721015
C205,C206	374721024
C207-C209	354761009
C210	354742219
C301,C302	354761009
C305,C306	354741019
C307,C308	354761009
C403,C404	374722224
C405,C406	354761009
C407,C408	354744709
C409,C410	353781099
C411,C412	354761009
C413,C414	374721015
C415,C416	374724714
C417,C418	374721834
C419,C420	374724724
C421-C424	374724734
C425	354742219
C427,C428	374721034
C429,C430	374724714
C431-C434	374722734
C435,C436	370131014
C437,C438	370131514
C439	374722734
C440,C443	354780479
C444	354722219
C445,C446	374723324

## PART NO. DESCRIPTION

MTZJ22D, Zener
MTZ5.6B, Zener
MTZ4.3C, Zener
NMC-6081, MPX COIL
NCH-2132, CHOKE COIL
NCH-2133, CHOKE COIL
NCH-4453, CHOKE COIL
NLO-2064, OSC COIL
CST4.00MGW, CERA ROCK
ECQ-B50V, 681J, TF C
CE04W50V, 2.2M, ELECT C
ECQ-B50V, 103J, TF C
CE04W16V, 47M, ELECT C
CE04W35V, 10M, ELECT C
ECQ-B50V, 183J, TF C
CE04W16V, 470M, ELECT C
CE04W50V, 2.2M, ELECT C
CE04W50V, 1M, ELECT C
ECQ-B50V, 222J, TF C
CE04W35V, 10M, ELECT C
ECQ-B50V, 222J, TF C
ECQ-V50V, 104J, TF C
CE04W16V, 100M, ELECT C
CE04W35V, 10M, ELECT C
CE04W16V, 100M, ELECT C
CE04W35V, 10M, ELECT C
CE04W50V, 4.7M, ELECT C
ECQ-B50V, 101K, TF C
ECQ-B50V, 102J, TF C
CE04W35V, 10M, ELECT C
CE04W16V, 220M, ELECT C
CE04W35V, 10M, ELECT C
CE04W16V, 100M, ELECT C
CE04W35V, 10M, ELECT C
ECQ-B50V, 222J, TF C
CE04W35V, 10M, ELECT C
ECQ-B50V, 471J, TF C
ECQ-B50V, 183J, TF C
ECQ-B50V, 472J, TF C
ECQ-V50V, 473J, TF C
CE04W16V, 220M, ELECT C
ECQ-B50V, 103J, TF C
ECQ-B50V, 471J, TF C
ECQ-V50V, 273J, TF C
APS100V, 101J, APS C
APS100V, 151J, APS C
ECQ-V50V, 273J, TF C
CE04W50V, 4.7M, ELECT C
CE04W6.3V, 220M, ELECT C
ECQ-B50V, 332J, TF C

## CIRCUIT NO. PART NO.

C447	374721034
C448	370138224
C450,C451	354761009
C452	354741019
C501,C502	354780479
C503,C504	354780109
C505	354741019
C601	354780479
C602	374721044
C606,C607	354780109
C608	354780109
C701,C709	354761009
C705,C903	354741019
C901	374721044
C902	393156827
C904	354761009
C905	354742219
C907	354780229
C909	393354727
C908,C910	354741019
C911	354741029
C913	354780229
C916	354780229
C918	354761019
C919	354780479
C920,C921	354780479
C922	354780229
C925	354744709
C926	354761009
C927	374722734
C928,C929	374721044
	Resistors
R117,R118	5210265Y
R403,R404	5210262
R447,R465	453530824
R461,R462	5210262
R702	49163392405
R712	443524704
R903	453534794
R907	453530224
R908	443521004
R911	443524714
R915	443521004
R923	453530104
	Switches,Plugs
P101	25055136
P102	25045329
P105	25055038
P201,P202	25055135
P401	25055132
P701	25050967 or 25050859 838430107 27190713

## DESCRIPTION

ECQ-B50V, 103J, TF C
APS100V, 822J, APS C
CE04W35V, 10M, ELECT C
CE04W16V, 100M, ELECT C
CE04W50V, 4.7M, ELECT C
CE04W50V, 1M, ELECT C
CE04W16V, 100M, ELECT C
CE04W50V, 4.7M, ELECT
ECQ-V50V, 104J, TF C
CE04W50V, 1M, ELECT C
CE04W50V, 1M, ELECT C
CE04W35V, 10M, ELECT C
CE04W16V, 100M, ELECT C
ECQ-V50V, 104J, TF C
CE04W25V, 6800M, FM C
CE04W35V, 10M, ELECT C
CE04W16V, 220M, ELECT C
CE04W50V, 2.2M, ELECT C
CE04W25V, 4700M, VX C
CE04W16V, 100M, ELECT C
CE04W16V, 1000M, ELECT C
CE04W35V, 22M, ELECT C
CE04W50V, 2.2M, ELECT C
CE04W35V, 100M, ELECT C
CE04W50V, 47M, ELECT C
CE04W50V, 4.7M, ELECT C
CE04W16V, 47M, ELECT C
CE04W35V, 10M, ELECT C
ECQ-V50V, 273J, TF C
ECQ-V50V, 104J, TF C
N06HR, 50KBC, TRIM R
N06HR, 10KBC, TRIM R
RNU1/2WCJ, 8.2, METAL R
N06HR, 10KBC, TRIM R
RM1/10IJ, 3.9K*5, R NET
RS1/2WBJ, 47, METAL O
RNU1/2WCJ, 0.47, METAL R
RNU1/2WCJ, 2.2, METAL R
RS1/2WBJ, 10, METAL O R
RS1/2WBJ, 470, METAL O R
RS1/2WBJ, 10, METAL O
RNU1/2WCJ, 1, METAL
NPLG-6P120, Pin plug
NPJ-4PDBL183, Pin jack
NPLG-2P29, Pin plug
NPLG-5P119, Pin Plug
NPLG-2P116, Pin plug
NSCT-27P654, Socket or NSCT-27P754, Socket"
3TTB+10S(BC), Screw
UAMS-11-0, Holder

## Display circuit PC board ass'y (NADIS-5337-3)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistor	
Q751	212139	"BJ337GK, FL Tube
	Resistors	
R153	5104289	N14RGLC250K, MN17Z, TRIM R
R155	5104251	N14RGL50K, A17Z, TRIM R
R217	5104354	N14RLC100K, B17Z, TRIM R
R471	5104290	N14RGLC5K, B17Z, TRIM R
	Sockets,Switches,Holder	
P751	25050891 or 25050933	NSCT-27P686, Socket or NSCT-27P720, Socket
S771-S782	25035652	NPS-111-S604, Power switch
S784	25035652 27190838A	NPS-111-S604, Power switch HOLDER

## Headphone PC board ass'y (NAETC-5338-3)

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

## Switch PC board ass'y (NASW-5339-3)

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

## Power supply PC board ass'y (NAPS-5340-3)

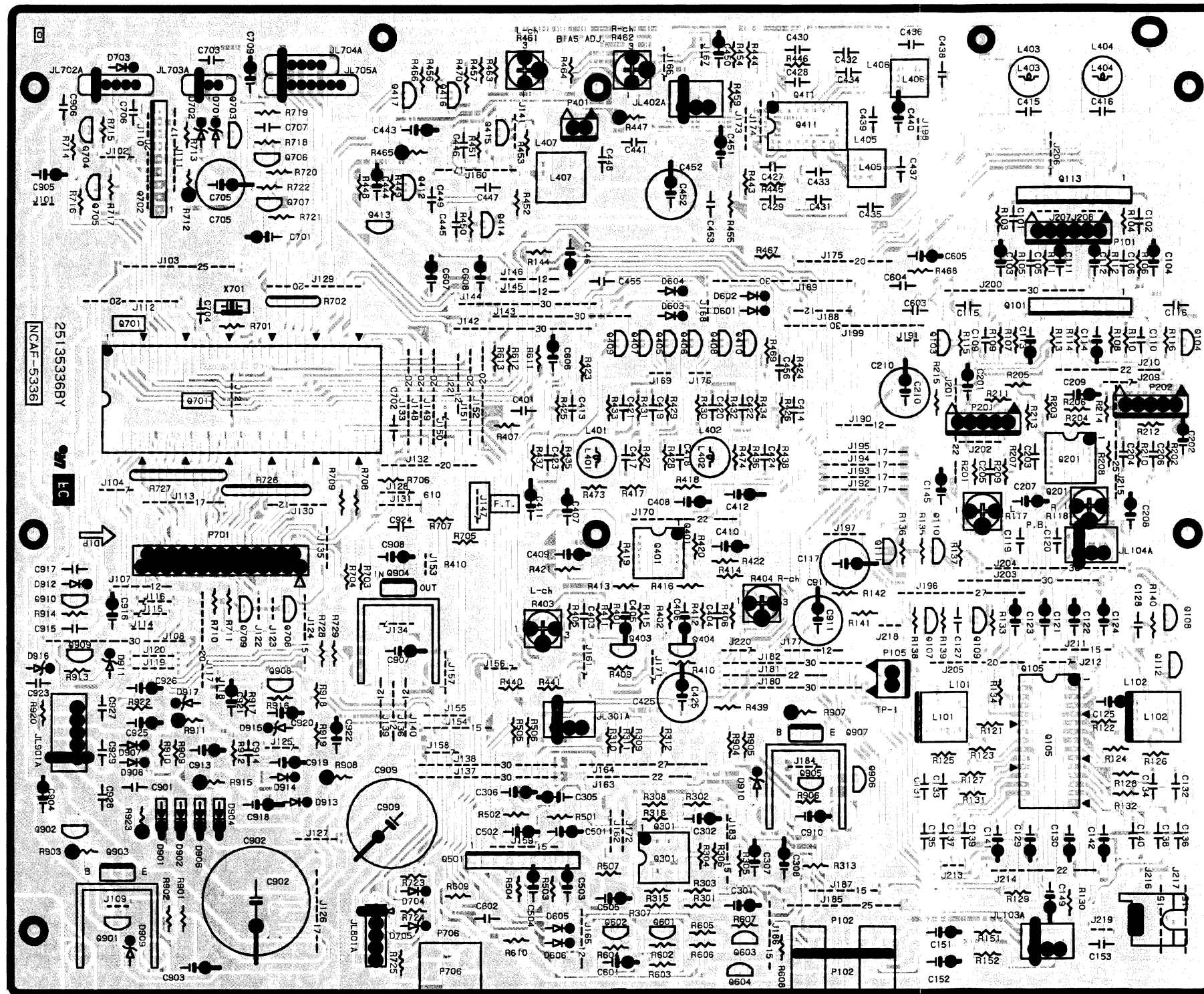
CIRCUIT NO.	PART NO.	DESCRIPTION
	Plug	
P951	25055676	"NPLG-2P632, Pin plug

## Bus line PC board ass'y (NAETC-5509-1)

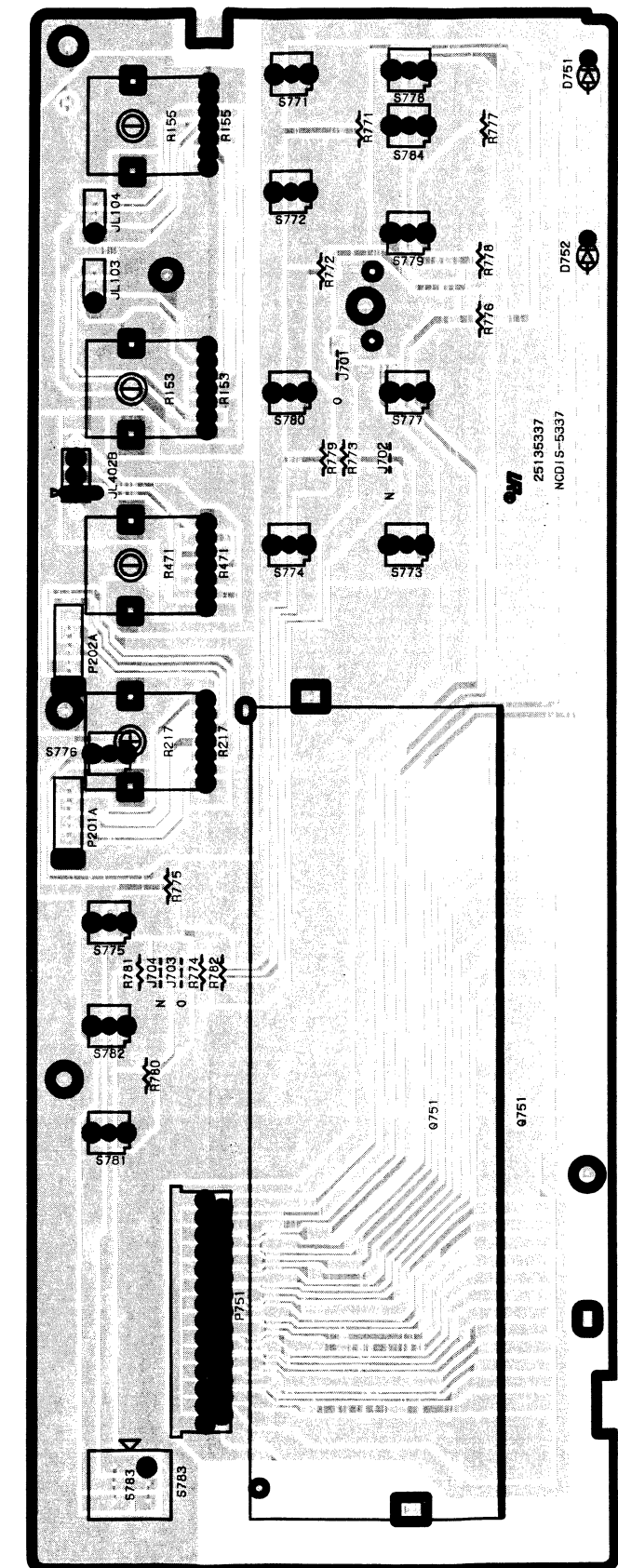
CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q801	22240844	HD404222C81S
Q802	22240906	Z86E0812PSC
	Transistors	
"Q803,Q804	2213355 or 2213354	2SA933S-S or 2SA933S-R
Q805	2213285 or 2213284	2SC1740S-S or 2SC1740S-R
	Diodes	
D801-D803	223163	IS133
	Coils	
X801	3010163	CST4.19MGW, CERA LOCK
X802	3010252	CST12.0MTW, CERA LOCK
	Capacitors	
"C801,C802	354761009	"CE04W35V, 10M ELECT
	Pin jack	
P801	25045395Y	NPJ-2PDYE221

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



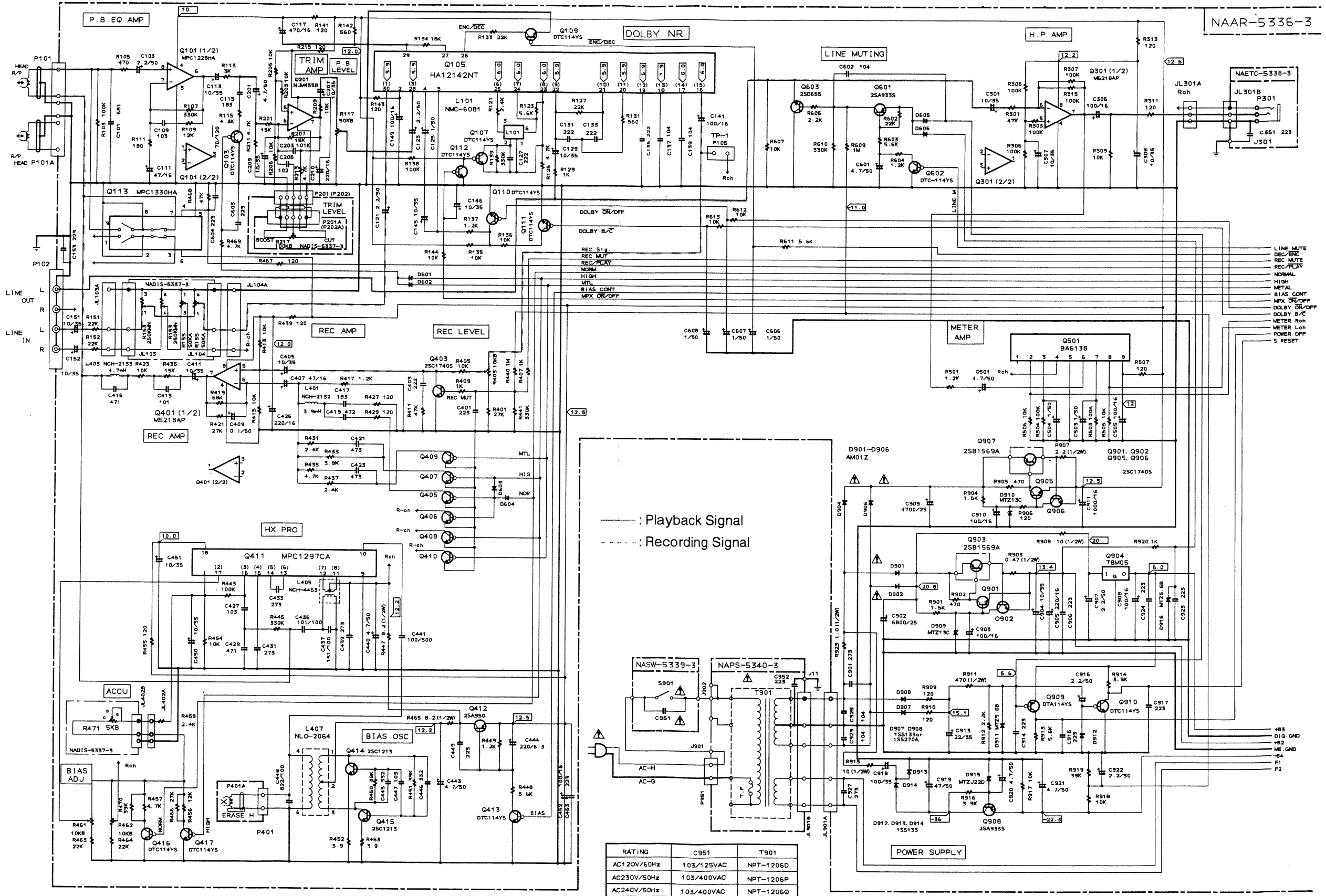
MAIN CIRCUIT PC BOARD (NANF-5336-3)



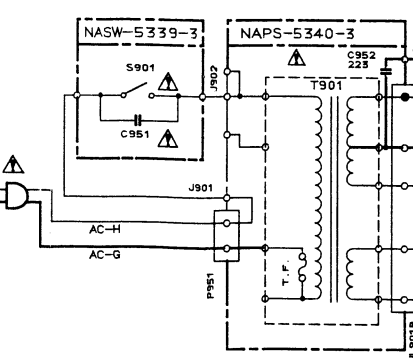
DISPLAY CIRCUIT PC BOARD (NADIS-5337-3)

# SCHEMATIC DIAGRAM 1/2

NAAR-5336-3



— : Playback Signal  
 - - - : Recording Signal



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

- LINE MUT
- DEC/ENC
- REC MUTE
- REC/PLAY
- NORMAL
- HIGH
- METAL
- BIAS CONT
- MPX ON/OFF
- DOLBY ON/OFF
- DOLBY B/C
- METER Roh
- METER Loh
- POWER OFF
- S. RESET

1  
2  
3  
4  
5

A B C D E F G



A

B

C

D

E

F

G

# SCHEMATIC DIAGRAM 2/2

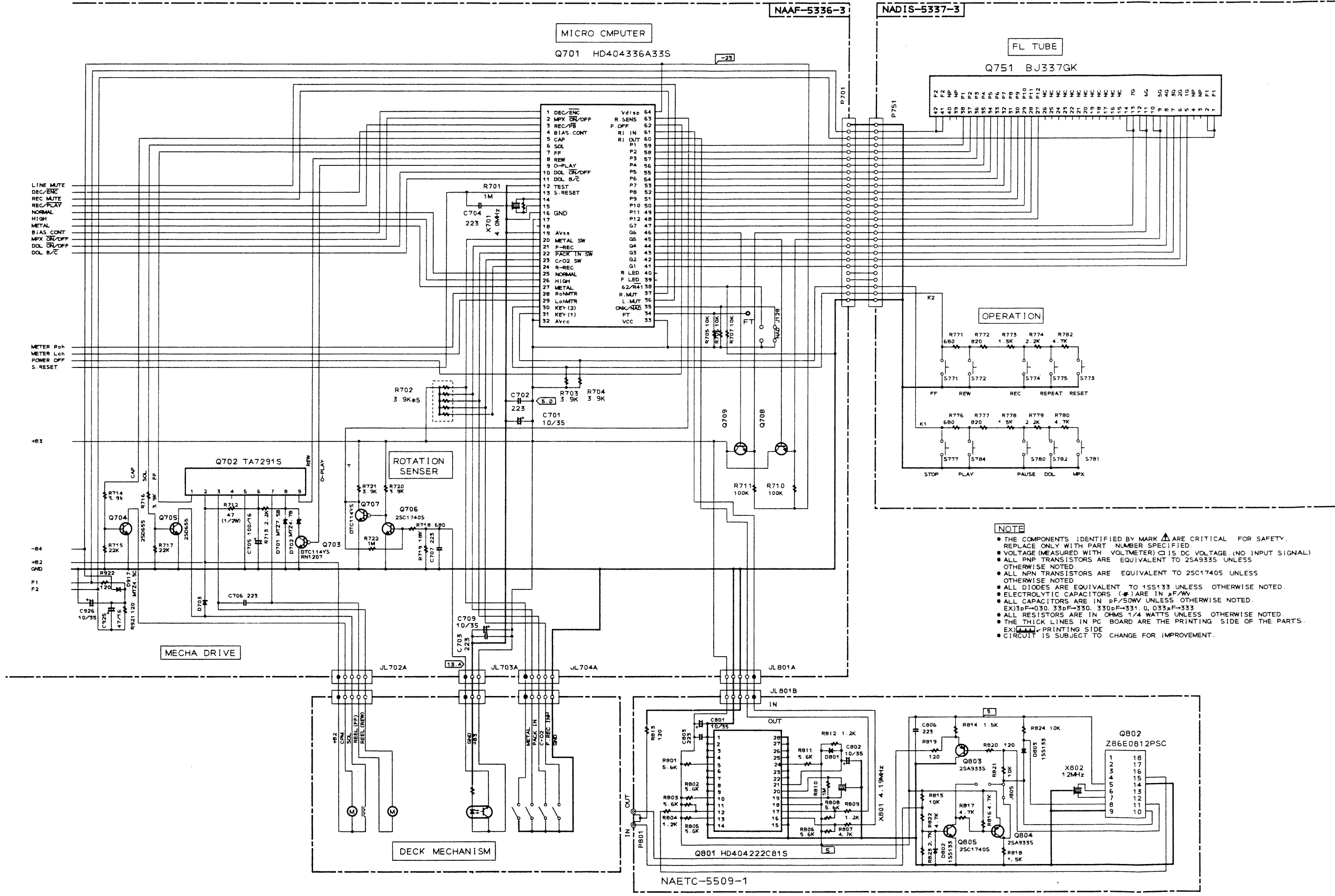
1

2

3

4

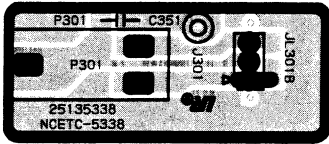
5



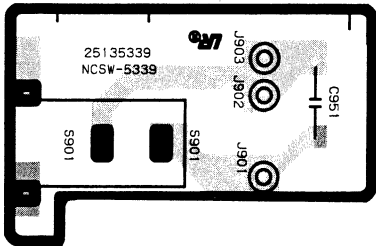
**NOTE**

- THE COMPONENTS IDENTIFIED BY MARK  $\Delta$  ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH VOLTMETER)  $\square$  IS DC VOLTAGE (NO INPUT SIGNAL).
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA9335 UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC17405 UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1S5133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS ( $\Phi$ ) ARE IN  $\mu$ F/W.
- ALL CAPACITORS ARE IN pF/50V UNLESS OTHERWISE NOTED. EX: 330pF-330, 330pF-33V, 0.033 $\mu$ 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.

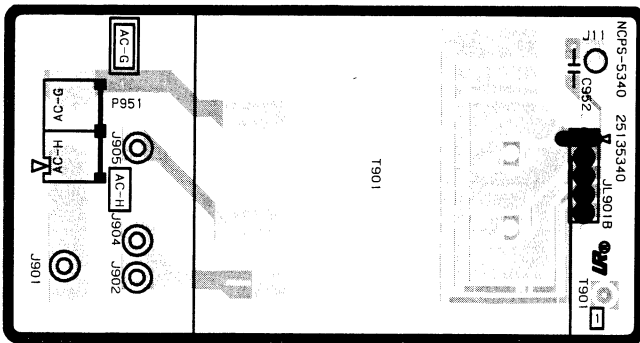
# PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



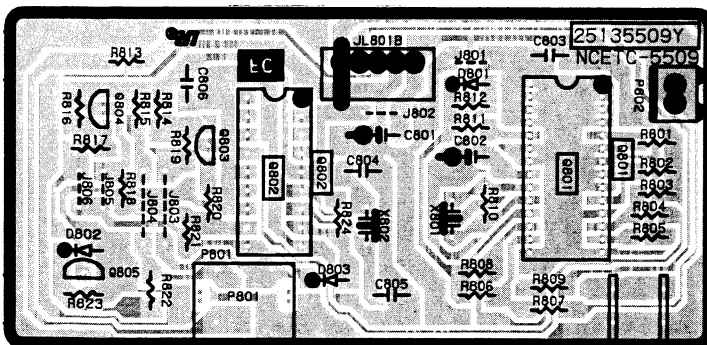
**HEADPHONE PC BOARD  
(NAETC-5338-3)**



**SWITCH PC BOARD  
(NASW-5339-3)**



**POWER SUPPLY PC BOARD  
(NAPS-5340-3)**



**BUS LINE PC BOARD  
(NAETC-5509-1)**