

ONKYO

TA-2570

MODEL

SERVICE MANUAL

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.

ONKYO[®]
AUDIO COMPONENTS

SPECIFICATIONS

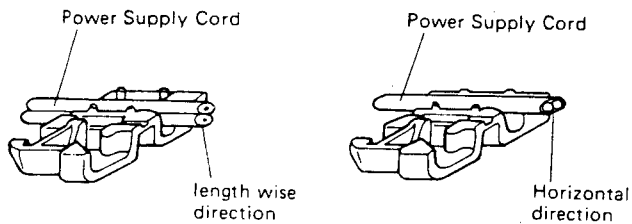
Track Format:	4-tracks, 2-channels
Erasing System:	AC erase
Tape Speed:	4.8 cm/sec. (1-7/8 i.p.s.)
Wow and Flutter:	0.04% (WRMS)
Frequency Response:	20 – 17,000Hz (Normal) (30 – 16,000Hz \pm 3dB) 20 – 18,000Hz (High) (30 – 17,000Hz \pm 3dB) 15 – 21,000Hz (Metal) (20 – 20,000Hz \pm 3dB)
S/N Ratio:	60dB (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: 60mV Input impedance: 50kohms
Outputs:	Line OUT: 2 Standard output level: 1100mV (0dB) Optimum load impedance: over 50 kohms Headphone Jack: 1 Optimum load impedance: 8 to 200 ohms
Motors:	DC servo motor: 1 DC motor: 2
Heads:	REC/PB: Special Hard Permalloy x 1; Erase head: Ferrite x 1
Power Supply Rating:	U.K. and Australian models: AC 240V, 50Hz U.S.A. and Canadian models: AC 120V, 60Hz Worldwide models: AC 120V and 220V switchable, 50 / 60Hz
Power Consumption:	24 watts
Dimensions:	435(W) x 132(H) x 366(D)mm (17-1/8" x 5-3/16" x 14-7/16")
Weight:	6.2 kg. (13.7 lbs.)

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

SERVICE PROCEDURES

1. Replacement of power supply cord

There are two power supply cord outlets on the strainrelief. Insert them in prescribed direction to ensure safety. AS-UC-3 (UD<120V> model) should be inserted lengthwise and other types of cords should be inserted horizontally.



2. Insulating resistance measurement

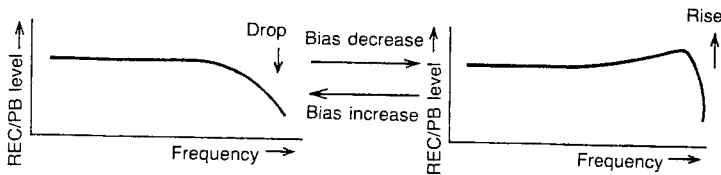
Connect the insulating-resistance tester between the plug of power supply cord and chassis.

Specifications; 500V more than 10MΩ

HX PRO CIRCUIT OPERATION EXPLANATION

1. Regarding recording frequency characteristic and bias

Ordinarily, if the recording bias current is increased, REC/PB frequency response level in the high frequency region (about 10KHz and above) drops, and if the bias is decreased, the response rises.



2. Regarding the basic operation of HX PRO (Refer to Fig. 1)

The HX PRO uses the μ PC1297CA IC. The operation is in accordance with the following.

- 1) At (a), the recording bias is added onto the audio signal, and the recording signal is detected. This is the same as the recording head recording the signal on the tape.
- 2) The signal of 1) preserves the frequency response with the integrated circuit of (b).

$$\text{Frequency} = \frac{R450 + R448}{2\pi \times C426 \times R450 \times R448} \quad (2.1)$$

By means of the frequency of Fig. 1, the frequency which is effective from the beginning is determined. In the ordinary situation, this is half the audio band (10KHz), (10KHz ~ 7.5KHz).

- 3) At (c), in order to use the affected waveform after-ward, absolute detection is carried out.

- 4) At (d), the waveform peak value is detected. The output becomes the peak DC voltage.
- 5) At (e), the standard voltage and the voltage of (4) are compared.
- 6) With the output of (e), the frequency generation level is controlled (voltage controlled amplifier). That is, the bias size is varied.

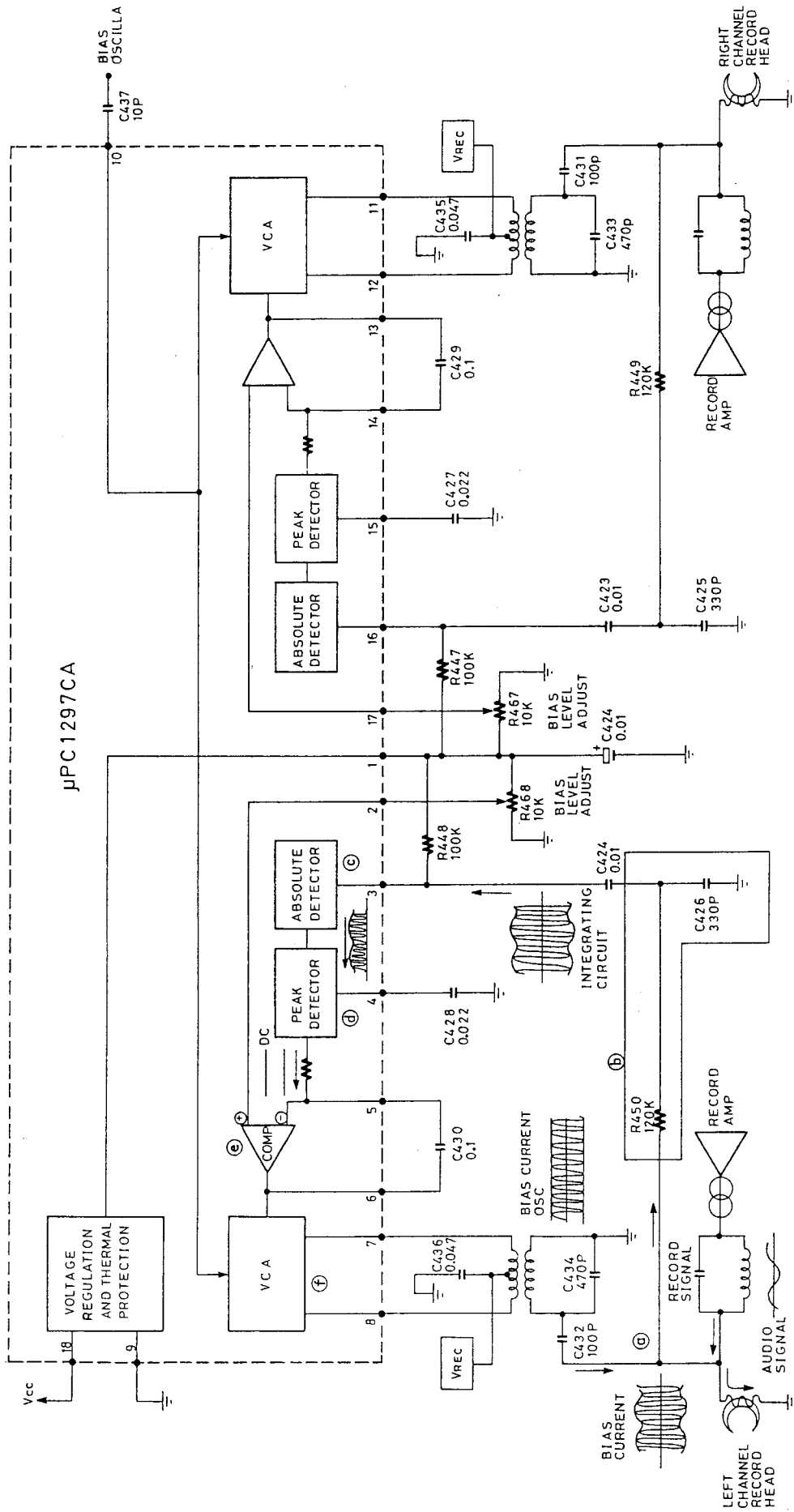
- 7) Summing up 1) ~ 6):

At (a), the time constant (frequency) that is detected in the recording signal is preserved, and above a certain frequency and above a certain level, the VCA controls the bias current by causing its reduction. When this is done, in the manner shown in the explanation of Item 1 above, the frequency high region is raised. With this control, the audio signal is instantaneously dealt with.

3. Regarding the operating conditions of the HX PRO

- 1) With equation (2. 1) noted above, the effect begins at the frequency thus determined.
- 2) Above a certain level the effect begins.
(Substantially 0 dB: In the vicinity of 500mV line out)
The audio signal component level is dependent upon the waveform after point (c).

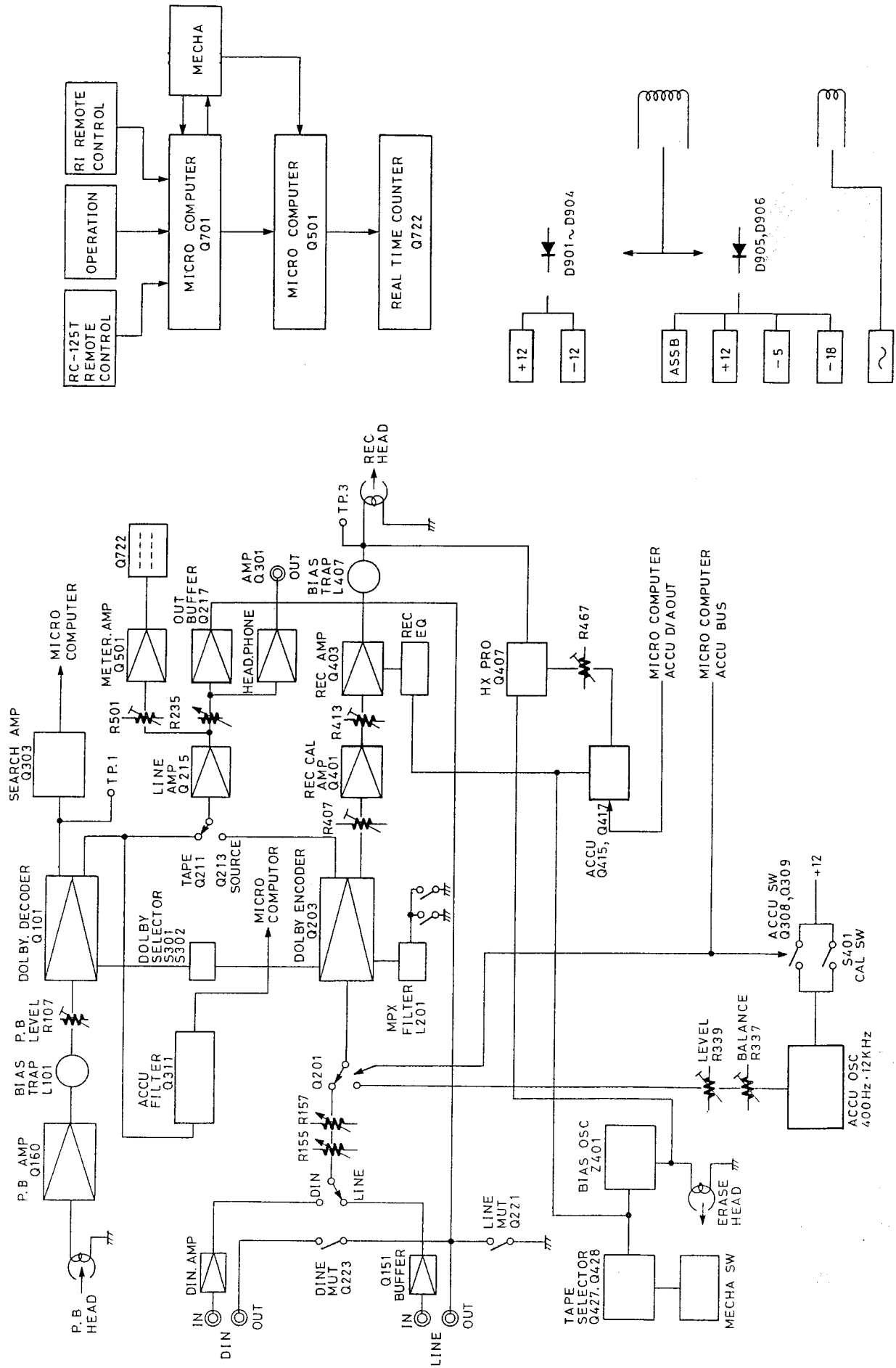
HX PRO BLOCK DIAGRAM



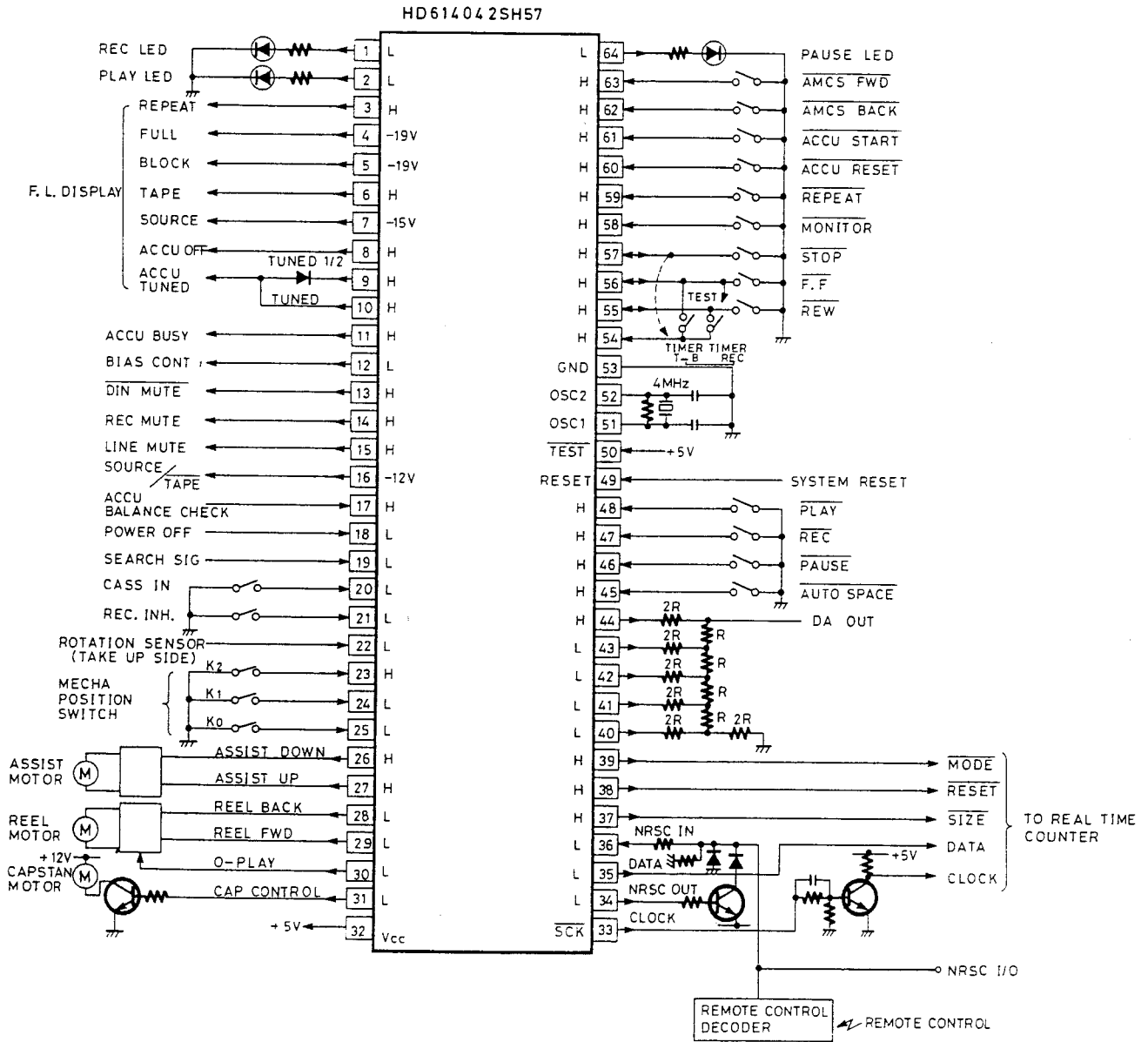
$$f = \frac{R450 + R448}{2\pi \times C426 \times R450 \times R448}$$

Fig. 1

BLOCK DIAGRAM



MICRO COMPUTER (HD614042SH57)

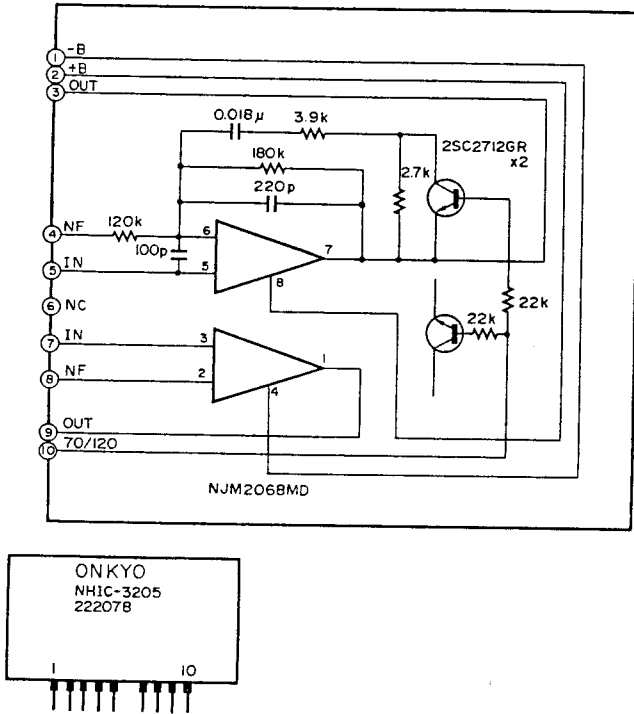


MECHANICAL POSITION CODE

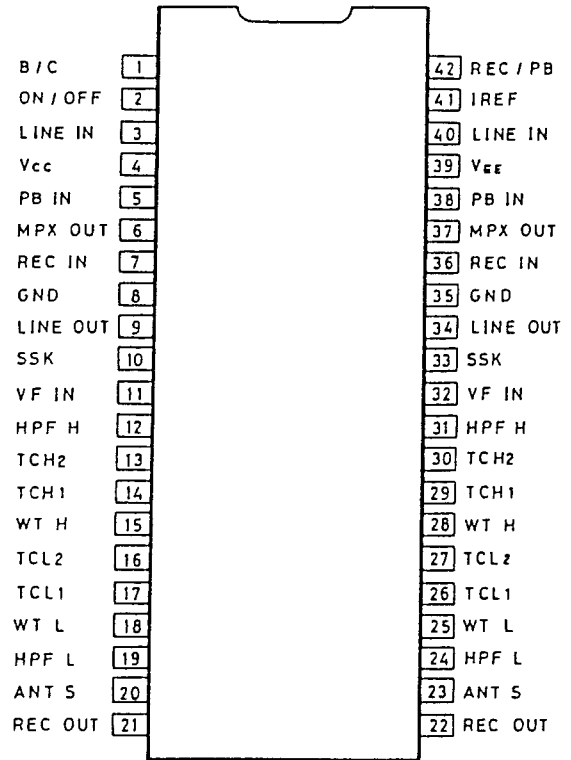
Q701 # 23	#24	#25	Mode
L	H	L	PLAY
L	L	H	PLAY → PAUSE
H	L	H	STOP
H	H	L	FF, REW

IC BLOCK DIAGRAM

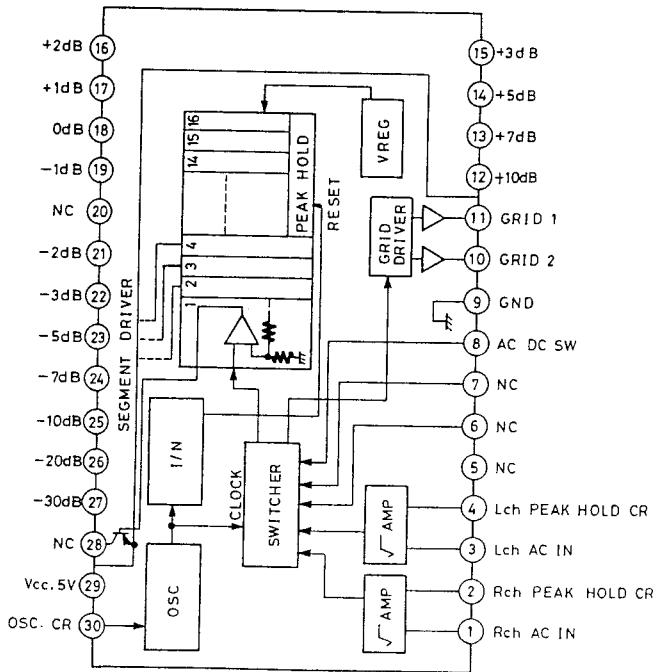
NCHC-3205 (P.B. AMP)



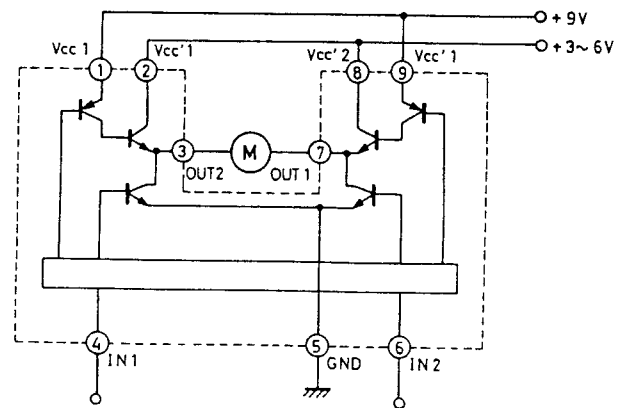
CX20187 (DOLBY N.R)

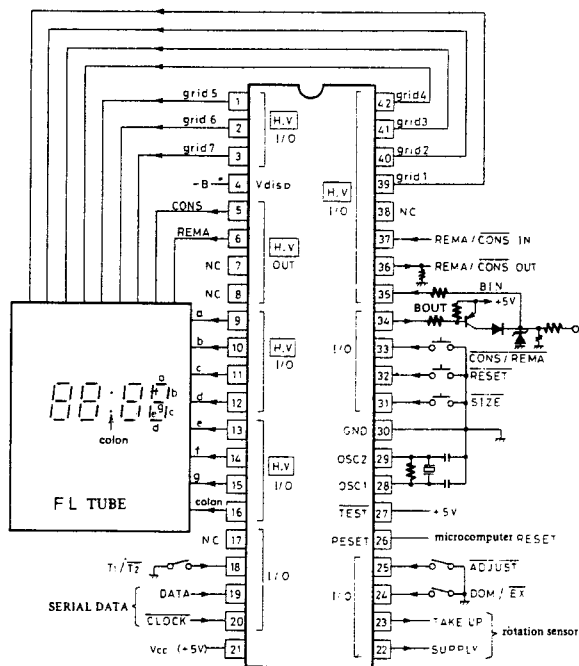


BA6800AS (METER DRIVE)



M54544AL (MOTOR DRIVE)





Terminal Name and Function

Pin No.	Name	Function
1 ~ 3	Grid 5 ~ 7	FL tube grid (DIGIT) drive use output
4	V _{disp}	Input (FL tube use) for minus bias voltage to pin Nos. 1 ~ 3, 5, 6, 9 ~ 16, 39 ~ 42
5	CONS	FL tube CONS display use output (time lapse)
6	REMA	FL tube REMA display use output (time remaining)
9 ~ 15	a ~ g	FL tube segment drive use output
16	Colon	FL tube ":" drive use output
18	T ₁ /T ₂	Microcomputer T ₁ /T ₂ function selection input (With T ₂ , system I/O receiving)
19	DATA	Deck mechanism status input (8 bit serial data) from mechanism control micro-computer
20	CLOCK	Clock input for reading above DATA (DATA taken on pulse wave dropping)
21	V _{cc}	Microcomputer power source (+5V)
22	SUPPLY	Cassette mechanism tape feed side turning pulse input
23	TAKE UP	Cassette mechanism tape windup side turning (pulse input)
24	DOM/EX	Domestic/export setting use selector input (Tape size type selector use) Domestic: With power ON C46 → C54 → C60 → C80 → C90 → C120
25	ADJUST	Remaining time calculation buffer compensating value input (normally open, compensating ground)
26	RESET	Microcomputer system reset
27	TEST	Microcomputer internal test use port, normally connected to V _{cc}
28, 29	OSC1, OSC2	Microcomputer clock oscillator terminal
30	GND	Microcomputer power source (GND)
31	SIZE	Tape size selector input
32	RESET	Lapsed time reset input (When CONS displays, digits are □ : □ □)
33	CONS/REMA	Lapsed time ← → remaining time selector input (toggle display)
34	BOUT	System bus output
35	BIN	System bus input
36	REMA/CONS OUT	Remaining time display/lapsed time display status output (when T ₂)
37	REMA/CONS IN	Remaining time display/lapsed time display status input (when T ₂)
39 ~ 42	Grid 1 ~ 4	FL tube grid (DIGIT) drive use output

ADJUSTMENT PROCEDURES

PRECAUTIONS

- 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 adjustments.
- Demagnetize record/playback head with a head demagnetizer.

TEST EQUIPMENT/TOOLS REQUIRED:

- Audio oscillator
- Digital frequency counter
- Oscilloscope
- Attenuator
- AC voltmeter
- Non-magnetic screw driver
- Test tapes
 - VTT-658 : 10 KHz, -15dB
 - MTT-111 : 3 kHz, -10dB
 - MTT-150 : Dolby level calibration
400Hz, tone 200nWb/m

Item	Connection of instrument	Line input	Test tape	Mode	Output indicator	Adjustment point	Adjust	Remarks	
1	Tape speed	Frequency counter to LINE output terminal	MTT-111	PB	Frequency counter	Semi-fixed on the motor	3.005 to 3.010Hz		
2	Head azimuth	AC voltmeter and oscilloscope to LINE output terminal	VTT-658	PB	AC voltmeter	Head azimuth screw	Maximum and same phase at channels L and R	fig-1	
3	Playback level	AC voltmeter to terminals TP-1 and TP-2	MTT-150	PB	AC voltmeter	R-107 (Ch.L) R-108 (Ch.R)	245mV		
4	Meter		MTT-150	PB	Level meter	R-501 (Ch.L) R-502 (Ch.R)	0dB	NADIS-3339	
5	Bias trap	AC voltmeter to terminals TP-1 and TP-2	METAL TAPE	REC	AC voltmeter	L-101 (Ch.L) L-102 (Ch.R)	Minimum		
6	HX-PRO	AC voltmeter to terminals TP-3 and TP-4	METAL TAPE	REC	AC voltmeter	L-409 (Ch.L) L-410 (Ch.R)	Maximum	R-467 R-468 counter clock wise	
7	Bias current	AC voltmeter to LINE output terminal	1kHz, -20dB and 12kHz, -20dB	NEW XL-II90	REC/PB	AC voltmeter	R-467 (Ch.L) R-468 (Ch.R)	Same level at REC/PB	Input VR maximum
8	Record level	fig-2	1kHz		REC	AC voltmeter	Attenuator or AF OSC output	350mV	Input VR maximum
					REC/PB	AC voltmeter	R-413 (Ch.L) R-414 (Ch.R)	Same level at REC/PB	
9	ACCU OSC signal	Oscilloscope to TP-5 (NCAF-3344)				Oscilloscope	R-337 (NCAF-3344)	Same level at 400Hz/12kHz fig-3	REC CAL SW ON
							R-339 (NCAF-3344)	30mVpp fig-3	

PLAY torque 35~70g/cm
 FF. REW torque 70g/cm
 Back tension 6~10g/cm

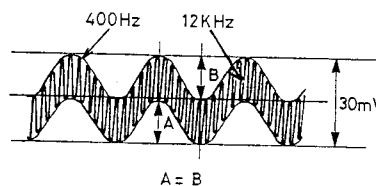
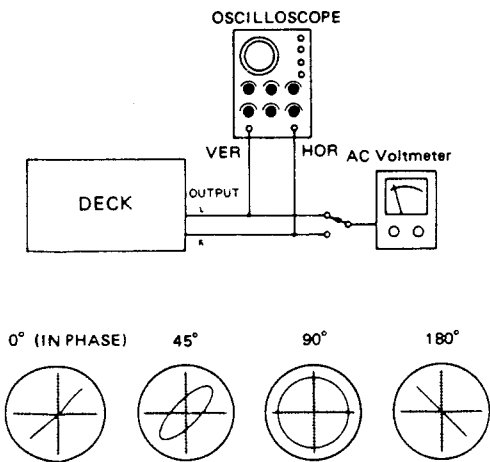
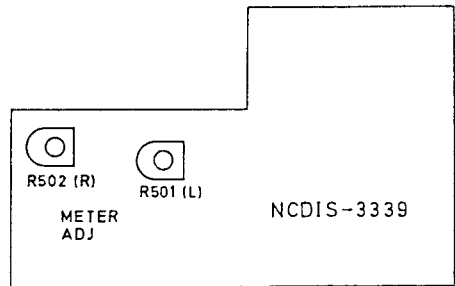
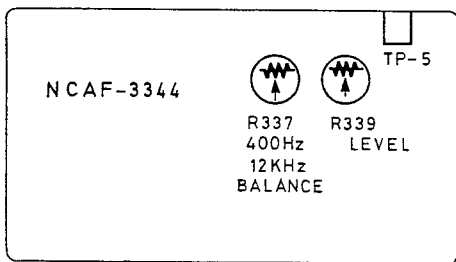
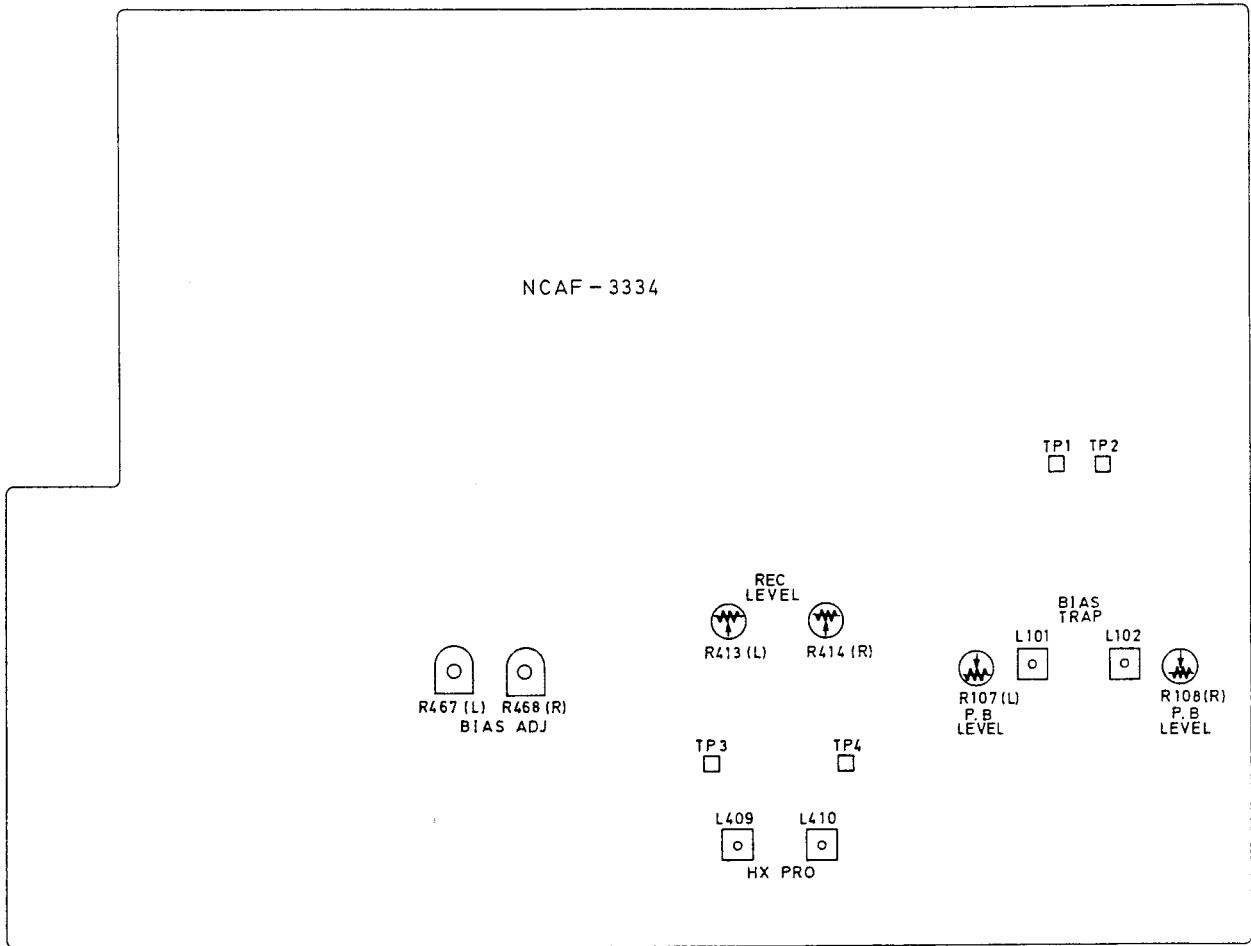


fig-3



Confirming phase relationship

fig-1

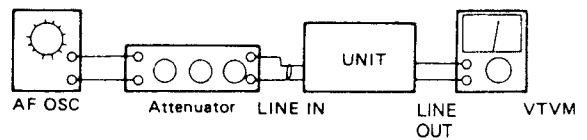


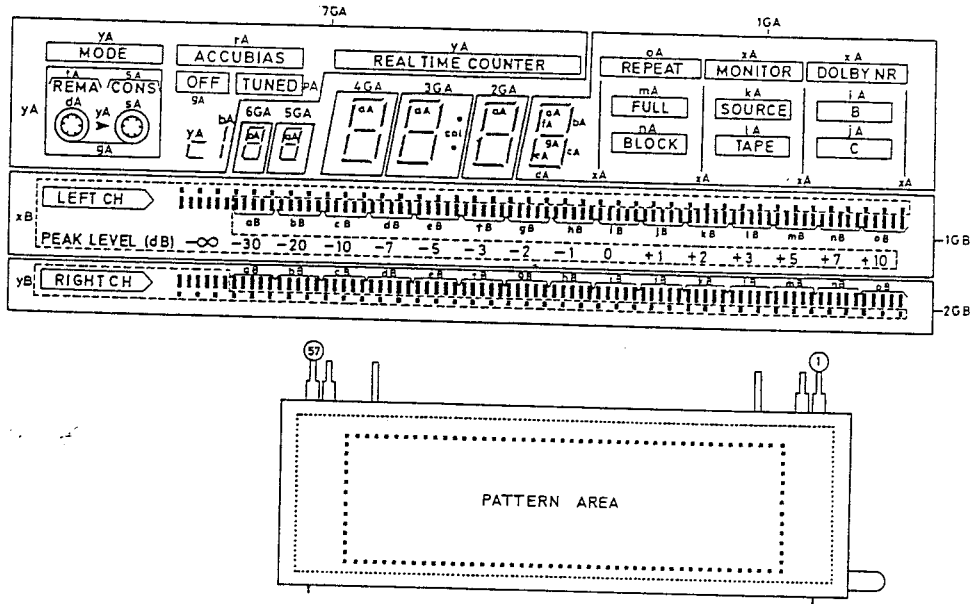
fig-2

CHASSIS-EXPLODED VIEW PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A1	27110430C	FRONT BRACKET AS	△ S902	25065123	NSS-1258P (W)
A4	27141273	BRACKET (PC)	△ T901	2300335	NPT-1003D (D)
A5	28133200	BACK PLATE		2300336	NPT-1003G (G)
A6	27130536A	BRACKET (PT)		2300337	NPT-1003DG (W)
A7	27130541A	BRACKET (VOL)		2300359	NPT-1003O (O)
A8	27273069A	JOINT (POW)	U1	1N048534-2	NAAF-3334-2 (D/W/O)
A9	27190524	HOLDER		1N048534-2A	NAAF-3334-2A (G)
A11	27121146A	BACK PANEL (D)	U2	1N048536-2	NADIS-3336-2
	27121147	BACK PANEL (G)	U3	1N048537-2	NASW-3337-2
	27121148	BACK PANEL (W)	U4	1N048538-2	NAETC-3338-2
	27121181	BACK PANEL (O)	U5	1N048539-2	NADIS-3339-2
A12	27100164B	CHASSIS	U6	1N048540-2	NAAF-3340-2
A14	834430088	TAP-TIGHT SCREW 3TTS+8B(BC)	U7	1N048545-2	NAAF-3345-1
A15	831130088	TAP-TIGHT SCREW 3TTW+8B	U8	1N048542-1	NASW-3342-2
A16	830440109	TAP-TIGHT SCREW 4TTC+10C(BC)	U9	1N048543-2	NASW-3343-2
A18	838426088	TAP-TIGHT SCREW 2.6TTB+8B	U10	1N048544-2	NAAF-3344-1
A19	27300750	BUSHING (CORD)	Z1	244116	NDM-108, CASSETTE DECK MECHANISM
A20	28140877	CUSHION			
A21	28140881	CUSHION			
A24	27141284	BRACKET(ST)			
A25	880009	NRP-345 RIVET			
A26	27270272	SPACER			
A301	28184397	TOP COVER			
A302	838440089	TAP-TIGHT SCREW 4TTB+8C(BC)			
A304	28140408	CUSHION			
A314	28191469	CLEAR PLATE			
A318	27301123A	CASSETTE LID			
A319	27301122	CASSETTE LID (AL)			
A320	28400413	WINDOW			
A321	28135156	BADGE			
A322	833430080	TAP-TIGHT SCREW 3TTP+8P(BC)			
A323	834230108	TAP-TIGHT SCREW 3TTS+10B(Ni)			
A330	27175153	LEG			
A501	1N049121	FRONT PANEL ASS'Y			
-a	28125194-1	END CAP (L)			
-b	28125195-1	END CAP (R)			
-c	27267555	GUIDE (VOL)			
-d	28194297	COSMETIC BAR			
-e	27267481B	GUIDE (POW)			
-f	28198670	FACET (POW)			
-g	28191475	CLEAR PLATE (RE)			
A801	28323388A	KNOB (PUSH)			
A803	28323389	KNOB (BAL)			
A804	28323410	KNOB (SEL)			
A806	28323287	KNOB (EJECT)			
A807	27260279	SHAFT (EJ)			
A808	28323395	KNOB (LEV)			
A810	28323175	KNOB (POW)			
P901	253112A	ACCORD AS-UC-4 (D)(PX)			
	253149	ACCORD AS-CEE (G/W)			
	253104	ACCORD C2.5BS2 (O)			

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

BG-555G (DISPLAY TUBE)



PIN CONNECTION

PIN NO.	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	n B	o B	y B	x B	2G B	1G B	N P	N P	t A	s A	y A	7G A	6G A	5G A	4G A	3G A	2G A	h A	g A	f A	e A	d A	c A	b A	a A	1G A	x A	r A	q A	p A	o A	n A	m A	l A	k A	j A	i A	N P	F I	F I
PIN NO.	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41																							
CONNECTION	F 2	F 2	N P	N P	a B	b B	c B	d B	e B	f B	g B	h B	i B	j B	k B	l B	m B																							

PC BOARD PARTS LIST

NAAF-3334-2

CIRCUIT NO.	PART NO.	DESCRIPTION
	ics	
Q101	222999	CX-20187
Q151	222502	NJM-4558DX
Q160	222078	NHIC-3205
Q201	222840661 or 222933	4066B or BU-4066B
Q203	222999	CX-20187
Q215	222502	NJM-4558DX
Q217	222921 or 222465	BA4558 or NJM-4558D
Q301	22240111 or 222808	BA15218 or M5218P
Q303	222940	BA335H
Q401	222502	NJM-4558DX
Q403	22240111 or 222808	BA15218 or M5218P
Q407	222959	μ PC1297CA
Q415, Q417	222921 or 222465	BA4558 or NJM-4558D
Q701	22240169	HD614042SH57
Q702	22240156	LC6527H-3659
Q706, Q709	222953	M-54544AL
Q901, Q902	222780125MIT	78M12
Q906	222780055MIT	78M05
	Transistors	
Q103	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q104	2211455 or 2212495	2SA1015-GR or JA101Q
Q153, Q154	2211406 or 2211896	2SC2240-BL or 2SC1815LL
Q155, Q156	2211455 or 2212495	2SA1015-GR or JA101Q
Q205-Q209	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q210	2211455 or 2212495	2SA1015-GR or JA101Q
Q211-Q214	2212304 or 2211945	2SK381-D or 2SK246-GR
Q219, Q220	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q221, Q222	2211706	2SD655-F
Q223, Q224	2212304 or 2211945	2SK381-D or 2SK246-GR
Q225, Q226	221281	DTC114YS
Q227	2211455 or 2212495	2SA1015-GR or JA101Q
Q304	221282	DTC144ES
Q305	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q308	2213090	DTA114YS
Q309	221282	DTC144ES
Q315	221282	DTC144ES
Q405, Q406	2212794 or 2212795	2SD1468-R or 2SD1468-S
Q419-Q421	221282	DTC144ES
Q422	2211455 or 2212495	2SA1015-GR or JA101Q
Q423, Q424	221282	DTC144ES
Q425	2201540	2SD947
Q426-Q428	2211455 or 2212495	2SA1015-GR or JA101Q
Q703	2213090	DTA114YS
Q704	221281	DTC114YS
Q705	2201385	2SD330-E

Q707	221281	DTC114YS
Q708	2201540	2SD947
Q710	2201540	2SD947
Q711	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q712	2213090	DTA114YS
Q713	2211455 or 2212495	2SA1015-GR or JA101Q
Q714	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q715	221282	DTC144ES
Q716	2211255 or 2210746	2SC1815-GR or 2SC945-AP
Q717	221282	DTC144ES
Q718	2213090	DTA114YS
Q903	2211455 or 2212495	2SA1015-GR or JA101Q
Q904	2201924 or 2201385	2SD1761-E or 2SD330-E
Q905	2211255 or 2210746	2SC1815-GR or 2SC945-AP
	Diodes	
D101, D102	224450822, 224150822 or 224650822	MTZ8.2B, 05AZ8.2Y or HZ8.2EB2
D151-D154	223163	1SS133
D201, D202	224450822, 224150822 or 224650822	MTZ8.2B, 05AZ8.2Y or HZ8.2EB2
D205, D206	223163	1SS133 (G)
D207-D211	223163	1SS133
D301, D302	223163	1SS133
D310	223163	1SS133
D401	223163	1SS133
D404-D409	223163	1SS133
D701	224451002, 224151002 or 224651002	MTZ10B, 05AZ10Y or HZ10EB2
D702	224451003, 224151003 or 224651003	MTZ10C, 05AZ10Z or HZ10EB3
D703	224450562, 224150562 or 224650562	MTZ5.6B, 05AZ5.6Y or HZ-5.6E-B2
D704-D707	223163	1SS133
D901-D906	22380006 or 223894	1N4003 or 1N4002F
D907	224452001, 224152001 or 224652001	MTZ20A, 05AZ20X or HZ20EB1
D908	224450511, 224150511 or 224650511	MTZ5.1A, 05AZ5.1X or HZ5.1EB1
D909	22380006 or 223894	1N4003 or 1N4002F
D910	224451501, 224151501 or 224651501	MTZ15A, 05AZ15X or HZ15EB1
D911, D912	223163	1SS133
	Coils	
L101, L102	231147	NCH-4199
L103, L104	233382	NMC-2069
L201, L202	233328	NMC-6051
L203, L204	233382	NMC-2069
L407, L408	231101	NCH-2148
L409, L410	231100	NCH-4147
L411, L412	231077	NCH-2125
	OSC Block	
Z401	231149	NOB-038

X701	3010099 or 3010128	Ceramic OSC CSA-4.00MG or PRS-4.00RM11
	Capacitors	
C103, C104	354722219	220 μ F6.3V, ELECT.
C105, C106	354741009	10 μ F16V, ELECT.
C107, C108	354741009	10 μ F16V, ELECT.
C115, C116	354744719	470 μ F16V, ELECT.
C139, C140	354741009	10 μ F16V, ELECT.
C141, C142	354741019	100 μ F16V, ELECT.
C143, C144	354742219	220 μ F16V, ELECT.
C147	354742209	22 μ F16V, ELECT.
C151, C152	392880107	1 μ F50V, LL.
C153, C154	392880107	1 μ F50V, LL. (G)
C155, C156	354782299	0.22 μ F50V, ELECT. (G)
C157, C158	354741019	100 μ F16V, ELECT. (G)
C163, C164	354780479	4.7 μ F50V, ELECT.
C201, C202	354780479	4.7 μ F50V, ELECT.
C203, C204	352950476	4.7 μ F25V, NP.
C229, C230	354741009	10 μ F16V, ELECT.
C231, C232	354741009	10 μ F16V, ELECT.
C233, C234	354741019	100 μ F16V, ELECT.
C235, C236	354742219	220 μ F16V, ELECT.
C237	354780479	4.7 μ F50V, ELECT.
C241, C242	354741009	10 μ F16V, ELECT.
C245	354780229	2.2 μ F50V, ELECT.
C246	354744709	47 μ F16V, ELECT.
C247, C248	354780479	4.7 μ F50V, ELECT.
C249	354741009	10 μ F16V, ELECT.
C251, C252	354741009	10 μ F16V, ELECT.
C301, C302	354741009	10 μ F16V, ELECT.
C303	354780229	2.2 μ F50V, ELECT.
C305	354782299	0.22 μ F50V, ELECT.
C306	354784799	0.47 μ F50V, ELECT.
C327	354780479	4.7 μ F50V, ELECT.
C328	354741009	10 μ F16V, ELECT.
C401, C402	354741009	10 μ F16V, ELECT.
C403, C404	354780479	4.7 μ F50V, ELECT.
C405, C406	354782299	0.22 μ F50V, ELECT.
C407, C408	354780479	4.7 μ F50V, ELECT.
C431, C432	370131014S	100PF 100V, APS
C433, C434	370134714S	470PF 100V, APS
C438, C439	354741009	10 μ F16V, ELECT.
C440, C441	354722219S	220 μ F3.6V, ELECT.
C442-C444	354780479	4.7 μ F50V, ELECT.
C708	354780479	4.7 μ F50V, ELECT.
C712	354784799	0.47 μ F50V, ELECT.
C716	354741009	10 μ F16V, ELECT.
C902, C903	354752229S	2200 μ F25V, ELECT.
C904, C905	354784799	0.47 μ F50V, ELECT.
C906, C907	354780479	4.7 μ F50V, ELECT.
C908	354751029S	1000 μ F25V, ELECT.
C909	354741019	100 μ F16V, ELECT.
C910	354744709	47 μ F16V, ELECT.
C911	3504168	13000 μ F25V, ELECT.
C912, C913	354784799	0.47 μ F50V, ELECT.
C914	354780479	4.7 μ F50V, ELECT.
	Resistors	
R107, R108	5210062	N06HR 4.7KBD
R413, R414	5210062	N06HR 4.7KBD
R467, R468	5215045 or 5215021	N08HR 10KBC or N08HR 10KBC
R473	442525604	RS1/2WBJ 56 Ω
R476	442525604	RS1/2WBJ 56 Ω
R704	49163104407	100k Ω \times 7, 1/10W, NETWORK
R707	49163392405	3.9k Ω \times 5, 1/10W, NETWORK
R710	441722704	RS 2 WBJ 27 Ω
R737	49163392407	3.9k Ω \times 7, 1/10W, NETWORK
R738	49163392409	3.9k Ω \times 9, 1/10W, NETWORK
R903, R904	442522294	RS1/2WBJ 0.22 Ω

R905	442520224	RS1/2WBJ 2.2 Ω
R908	441724704	RS 2 WBJ 47 Ω
R909	442520104	RS1/2WBJ 1.0 Ω
	Plug	
P101	25055134	NPLG-4P118
P103	25045208	NPJ-4PDBL88
P105	25050064	NSCT-5P18. DIN SOCKET (G)
P107, P108	25055147	NPLG-3P131
P201L, P201R	25055147	NPLG-3P131
P303A	2000878	NSAS-6P834. SOCKET
P307	25055186	NPLG-5P170
P401L, P401R	25055147	NPLG-3P131
P402	25055186	NPLG-5P170
P405	25055134	NPLG-4P118
P407	25055132	NPLG-2P116
P501L, P502R	25055146	NPLG-2P130
P701	25055190	NPLG-9P174
P702	25055188	NPLG-7P172
P704	25055185	NPLG-4P169
P705, P706	25055149	NPLG-5P133
P708	25055151	NPLG-7P135
P709	25055139	NPLG-9P123
P710	25055140	NPLG-10P124
P711	25055184	NPLG-3P168
P712	25045172	HSJ-1003-01-020
	Miscellaneous	
	27160211-1	RAD-68B. RADIATOR
	27160227	RAD-076. RADIATOR
	27160211	RAD-68. RADIATOR
	82143006	3P+6FN(BC), SCREW
	NADIS-3336-2	
	CIRCUIT NO. PART NO.	DESCRIPTION
D913, D914	225142 27190499A	SEL2913K. LED HOLDER(LED). POW
	NASW-3337-2	
	CIRCUIT NO. PART NO.	DESCRIPTION
S721	25030305	NRS-123-15MP, TIMER SWITCH
	NAETC-3338-2	
	CIRCUIT NO. PART NO.	DESCRIPTION
P301	25045139	HLJ0504-01-010
	NADIS-3339-2	
	CIRCUIT NO. PART NO.	DESCRIPTION
Q501	22240170	BA6800AS
Q720	22240084	HD614128SA41
	Display tube	
Q722	212057	BG-545G
	Transistor	
Q503, Q504	2213090	DTA114YS
Q723, Q724	2211255 or 2210746	2SC1815GR or 2SC945A-P
	Ceramic OSC	
X702	3010118 or 3010129	CSA3.00MG or PRS-3.00RM03
	Capacitor	
C501, C502	354741009	10 μ F16V, ELECT.
C503, C504	354742209	22 μ F16V, ELECT.
C720	354741009	10 μ F16V, ELECT.

R501, R502 R509	Resistor	
	5215020 49163104415	NO8HR5KBC 100k×15, 1/10W

P501A P703 P705A P706A P707 P708A	Socket, plug	
	2000879	NSAS-8P835
	25055226	NPLG-4P210
	2000757	NSAS-10P713
	2000649	NSAS-10P605
	25055225	NPLG-3P209
2000884	NSAS-14P840	

Bracket	
27130539A	BRACKET(FL)

NAAF-3340-2

CIRCUIT NO. PART NO. DESCRIPTION

Q409-Q414	Transistor	
	2211255 or 2210746	2SC1815GR or 2SC945A-P

L401, L402 L403, L404 L405, L406	Coil	
	233194 or 231089	NCH-1039 or NCH-2137
	24606069 or 231084	NCH-1007 or NCH-2132
	24606080 or 231083	NCH-1022 or NCH-2131

P403 P404	Plug	
	25055317 25055319	NPLG-3P300 NPLG-5P302

NAAF-3345-1

CIRCUIT NO. PART NO. DESCRIPTION

Q750 Q751 D311	24130001	GP1U501S
	221281	DTC114YS
	225137CG, 225137DG or 225137DY	SEL2413CG, SEL2413DG or SEL2413DY

R155 R157 R235 R407, R408	Resistor	
	5104239	N12RGLC5KMN25Z
	5104241	N16RGL5KA25Z
	5104238	N12RGL5KA25Z
5104240	N12RGLC5KB25Z	

S301-S303 S401	Switch	
	25035514 25035515	NPS-122-L476, PUSH NPS-142-L477, PUSH

P107A P108A P201A P307A P401A P402A P707A P711A	Socket	
	2000877A	NSAS-6P833
	2000876A	NSAS-6P832
	2000886	NSAS-12P842
	2000776	NSAS-10P732
	2000887	NSAS-12P843
	2000885	NSAS-10P841
	2000875	NSAS-6P831
	2000490	NSAS-6P446

Holder	
27190650	HOLDER(LED)

NASW-3342-2

CIRCUIT NO. PART NO. DESCRIPTION

D708, D709 D710	LED	
	225141	SEL2213C
	225137CG, 225137DG or 225137DY	SEL2413CG, SEL2413DG or SEL2413DY

S701-S710 S712-S717	Switch	
	25035548 25035548	NPS-111-S510, PUSH NPS-111-S510, PUSH

P701A P702A P703A P704A	Socket	
	2000883	NSAS-18P839
	2000818	NSAS-14P774
	2000665	NSAS-8P621
2000571	NSAS-8P527	

P701A P702A P703A P704A	Holder	
	27190649	HOLDER(LED3)

NASW-3343-2

CIRCUIT NO. PART NO. DESCRIPTION

C901 S901	3500065A 25035558 25060092	0.01μ, AC400V, CAPACITOR IS. NPS-111-L520P, PUSH NMT-1S33, TERMINAL
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NASF-3344-1

CIRCUIT NO. PART NO. DESCRIPTION

Q311	lc	
	222681 or 22240040	IR3702 or NJM2902N

Q306, Q307 Q321	Transistor	
	2211255 or 2210746	2SC1815GR or 2SC945A-P
	2211255 or 2210746	2SC1815GR or 2SC945A-P

D304-D307 D308 D309	Diode	
	223132	1K60
	223163	1SS133
	224450511, 224150511 or 224650511	MTZ5.1B, 05AZ5.1Y or HZ5.1EB2

C310 C311 C315-317 C320 C321 C324 C325	Capacitor	
	354780339	3.3μF50V, ELECT.
	354741009	10μF16V, ELECT.
	354741009.	10μF16V, ELCT.
	354780479	4.7μF50V, ELECT.
	354742209	22μF16V, ELECT.
	354784799	0.47μF50V, ELECT.
	354741009	10μF16V, ELECT.

R337 R339	Resistor	
	5215036 5215031	N08HR100KBA N08HR1KBA

P305 P306	Plug	
	25055318 25055319	NPLG-4P301 NPLG-5P302

NOTE (G): Only 220V model

TAPE MECHANISM PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
1		WIRE CONNECTOR	98-6	24610970	FELT
2		WIRE CONNECTOR	98-7	24602237A	GEAR (MOTOR)
3		WIRE CONNECTOR	99	352942206	22μF16V, NP.
5	24610498	LAMP HOLDER	100	24604066	TUBE φ0.8×8
6	24606306	LAMP	102	24611052	BINDER
7	24610669	PLATE (HEAD)	107	24611043	BRAKE PLATE AS
8	24610943	STEEL BALL φ3	107-1	24610999	BRAKE RUBBER
11	24600084	E HEAD	107-2	24611053	BRAKE PLATE
12	24611060	SPACER 0.06t	107-3	24605472	SPRING
13	24611061	SPACER 0.03t	108	24606307	P.C.B. AS (SENSOR)
14	24611062	SPACER 0.1t	109	24611074	BRACKET AS (B)
15	24610653	BRACKET B (E HEAD)	110	24601238	ASSIST MOTOR AS
16	24600037A	R/P HEAD	111	24602133	CAM GEAR
18	24610495	ADJUSTING NUT	112	24606104	LEAF SWITCH
19	801251	SCREW M2 × 4	113	24606119	LEAF SWITCH
20	24610652	SHAFT	114	24611075	CONNECTING PLATE
21	24605502	SPRING	115	24604064	COLLAR
22	24611046	HEAD BLOCK	201	833130049	PAN HEAD SCREW M3×4
23	24611064	HEAD BASE AS	202	82512012	BIND SCREW M2×12
31	24603284	LEVER (READER)	203	801250	PAN-HEAD SCREW M2×4
32	24605506	SPRING	204	8930251	E WASHER E2.5
33	24605507	SPRING (CASSETTE)	205	8930201	E WASHER E2
34	24602270	PINCH ROLLER AS	206	833125059	TAP-TIGHT SCREW M2.5×5
35	24605244	SPRING	207	801292	TAP-TIGHT SCREW M2×3.2
36	24605549	SPRING	208	893030	E WASHER E3
37	24610659A	PROTECTOR	209	801263	SCREW M2×3
38	24610846	BRACKET (R)	210	24609014	SCREW M2.5×8
39	24605188	SPRING (CASSETTE)	211	801325	PAN HEAD SCREW M2×+5
40	24610351	STEEL BALL φ2	212	891024	STOP RING CSTW-2.4
45	24603205	LEVER (REC)	213	835426082	TAPPING SCREW 2.6×8
46	24602271	BELT 25.8×1	214	801326	PAN HEAD SCREW M2.5×3.5
47	24601167	PULLEY AS	215	82512603	BIND SCREW M2.6×3
48	24611003	WASHER 1.8×3.8×0.5t	216	863720	NUT M2
49	24611047	WASHER 2.1×4.5×0.1t	217	833125049	TAP-TIGHT SCREW M2.5×4
50	24605707	SPRING	218	801259	SCREW M2×3
51	24602478	PINCH ROLLER AS	220	833125209	TAP-TIGHT SCREW M2.5×20
52	24611065	LEVER (ADJUSTING)	221	833126127	TAP-TIGHT 2.6×12
53	24605510	SPRING	222	863126	NUT M2.6
54	24604065	COLLAR	223	833125069	SCREW M2.5×6
55	24603286	LEVER (SELECTOR)	224	24610515	WASHER 2.6×4.7×0.25t
56	24605511	SPRING	301	24611372	STAND AS (CAPSTAN)
57	24610344	COLLAR	302	24611373	STAND AS (CAPSTAN)
58	24611066	LOCK PLATE	303	24602472	FLYWHEEL
61	24605504	SPRING	304	24602473	FLYWHEEL
62	24603285	LEVER (CANCEL)	305	24605452	SPRING (THRUST)
63	8771441005	WASHER 4.4×10×0.5t	306	24611374	WASHER
64	24611369	SIDE BRACKET AS (L)	307	24611375	WASHER
65		WIRE CONNECTOR 10P	308	24611376	BRACKET
66	24611057	WASHER	309	24602476	BELT
67	24606205	LEAF SWITCH	310	24610723	CUSHION
68	24604063	COLLAR	311	24609015	SCREW (MOTOR)
69	87712705	WASHER 2.7×5×0.5t	312	24611377	THRUST WASHER
70	24611068	BRACKET (SW)	313	24601236	CAPSTAN MOTOR AS
71	82112030	PAN HEAD SCREW M2×30	314	24602477	MOTOR PULLEY
72	24611370	MECHANISM CHASSIS AS			
81	24605456	SPRING			
82	24611051	DAMPER UNIT			
83	24610848A	HOLDER (L)			
84	24605463	SPRING			
85	24610949	FRAME			
86	24610849A	HOLDER (R)			
87	24611019	BACK PLATE (CASSETTE)			
91	24610349	WASHER 1.8×3.2×0.5t			
92	24602470	REEL AS			
94	24611072	SPRING STAND			
95	24605505	SPRING			
96	24605501	SPRING			
97	24611371	BRACKET AS (MOTOR)			
98	24601237	REEL MOTOR AS			
98-1	24601169	REEL MOTOR			
98-2	24611048	SPRING STAND			
98-3	24610374	WASHER 2.1×7×0.5t			
98-4	24605467	SPRING			
98-5	24602471	IDLER AS			

A

B

C

D

E

F

G

H

TAPE MECHANISM-EXPLODED VIEW

1

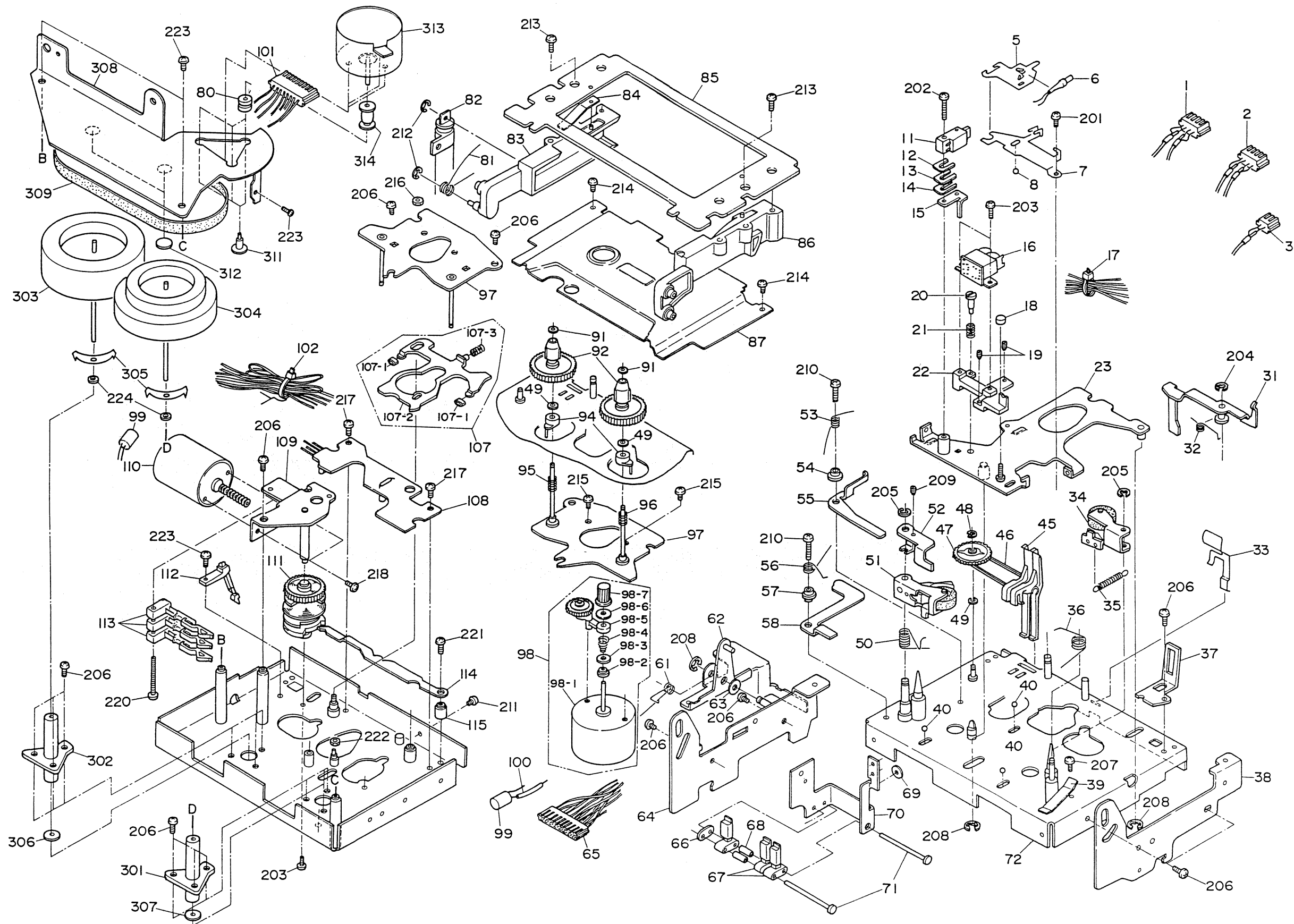
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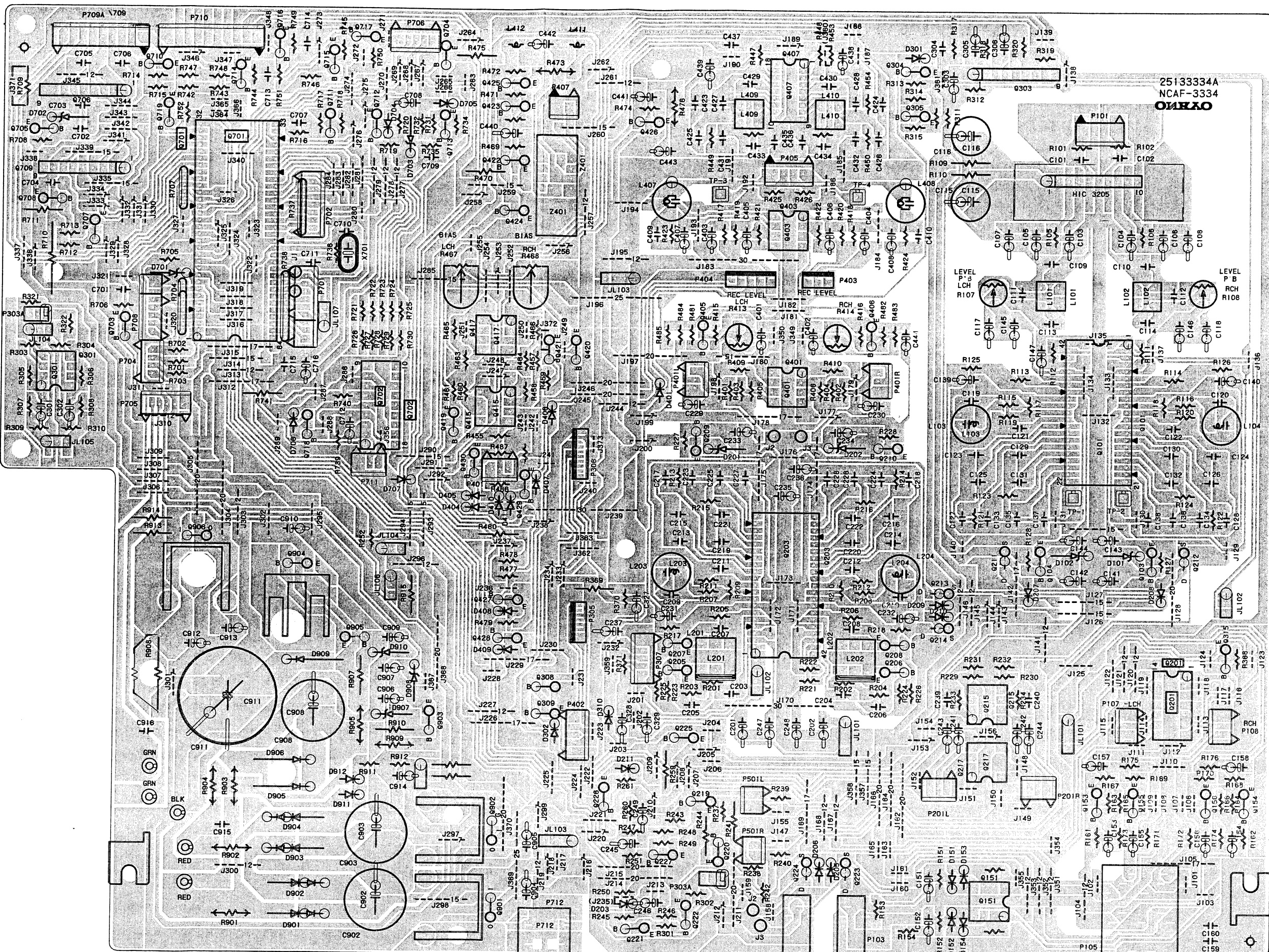
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6



PC BOARD VIEW FROM BOTTOM SIDE

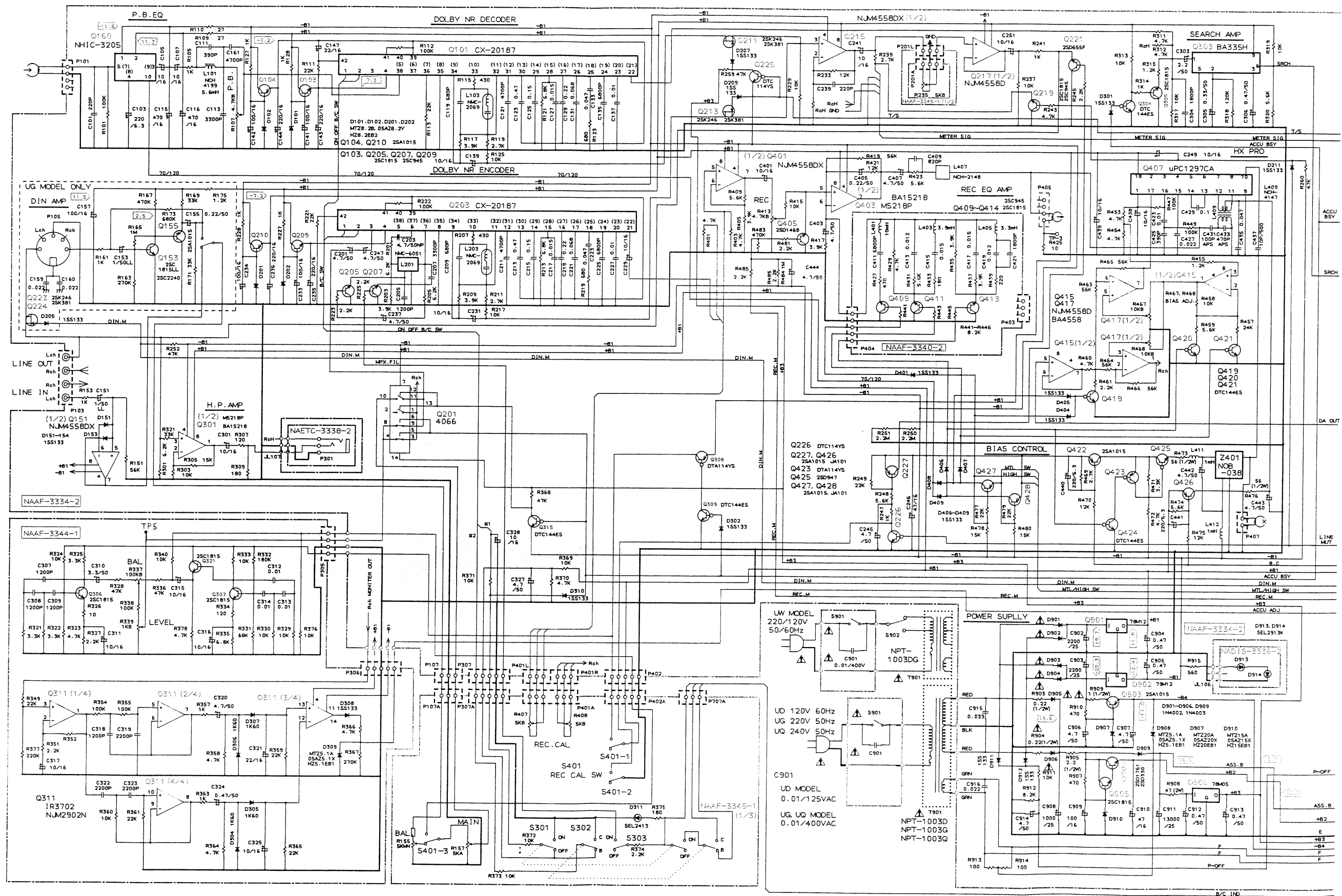
NAFF-3334-2



251 33334A
NCAF-3334A
ONYKO

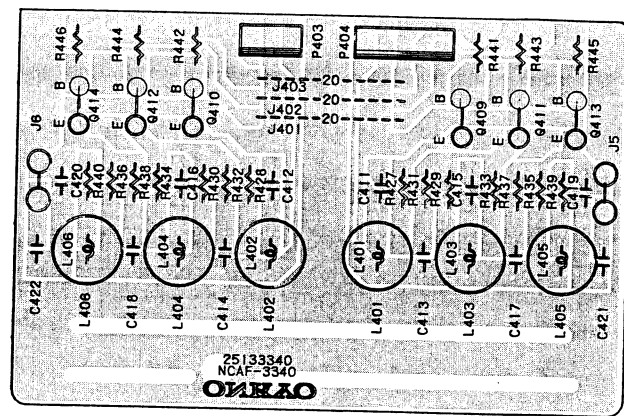
SCHEMATIC DIAGRAM (AUDIO SECTION) 1/2

1
2
3
4
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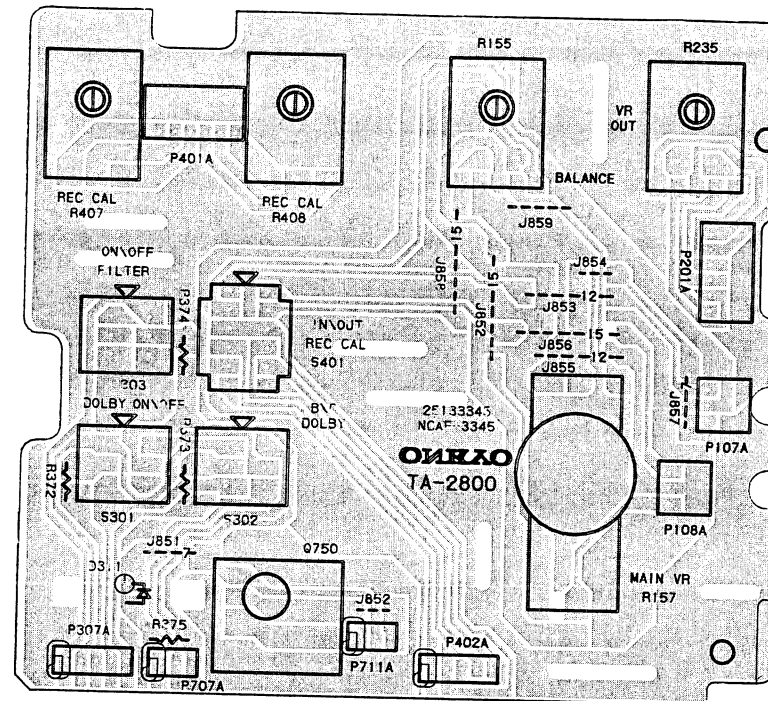


PC BOARD VIEW FROM BOTTOM SIDE

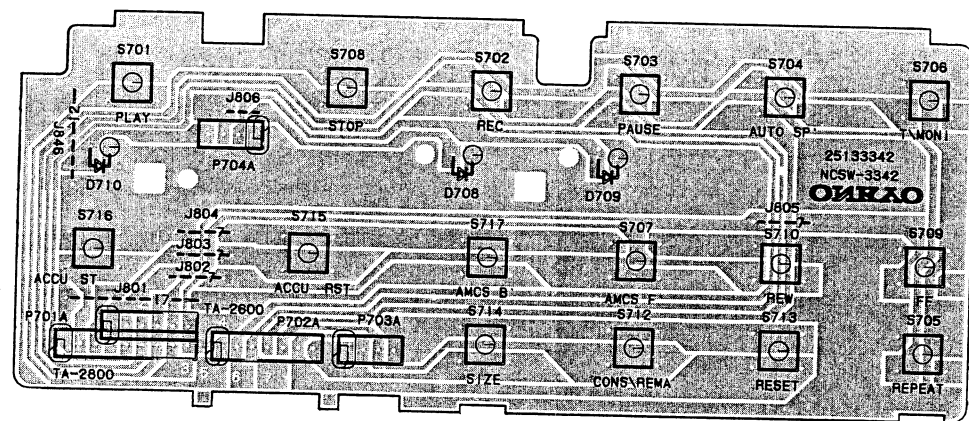
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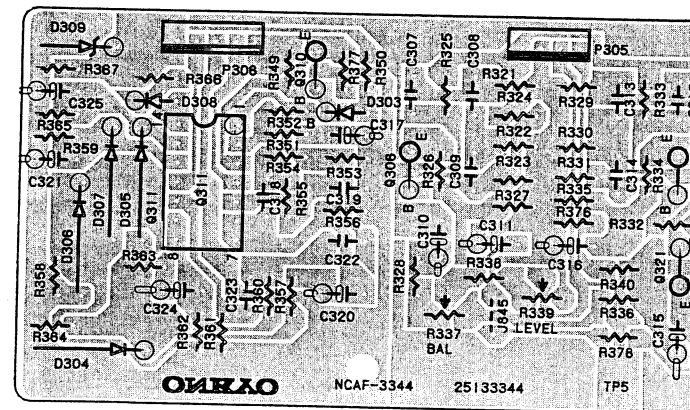
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NASW-3342-2



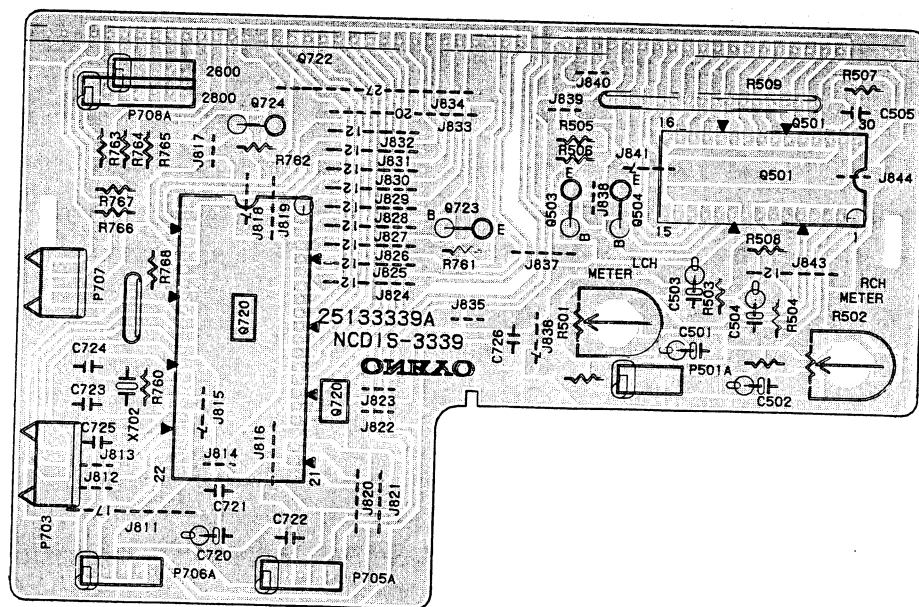
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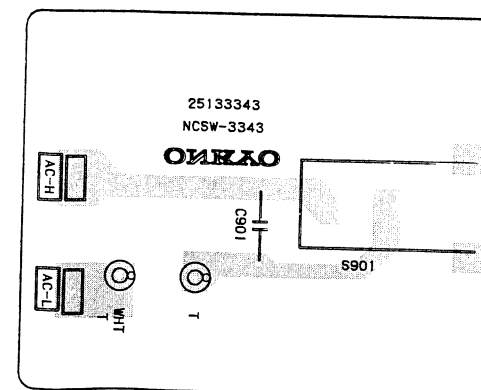
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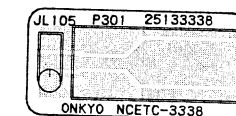
NADIS-3339-2



NASW-3343-2



NAETC-3338-2






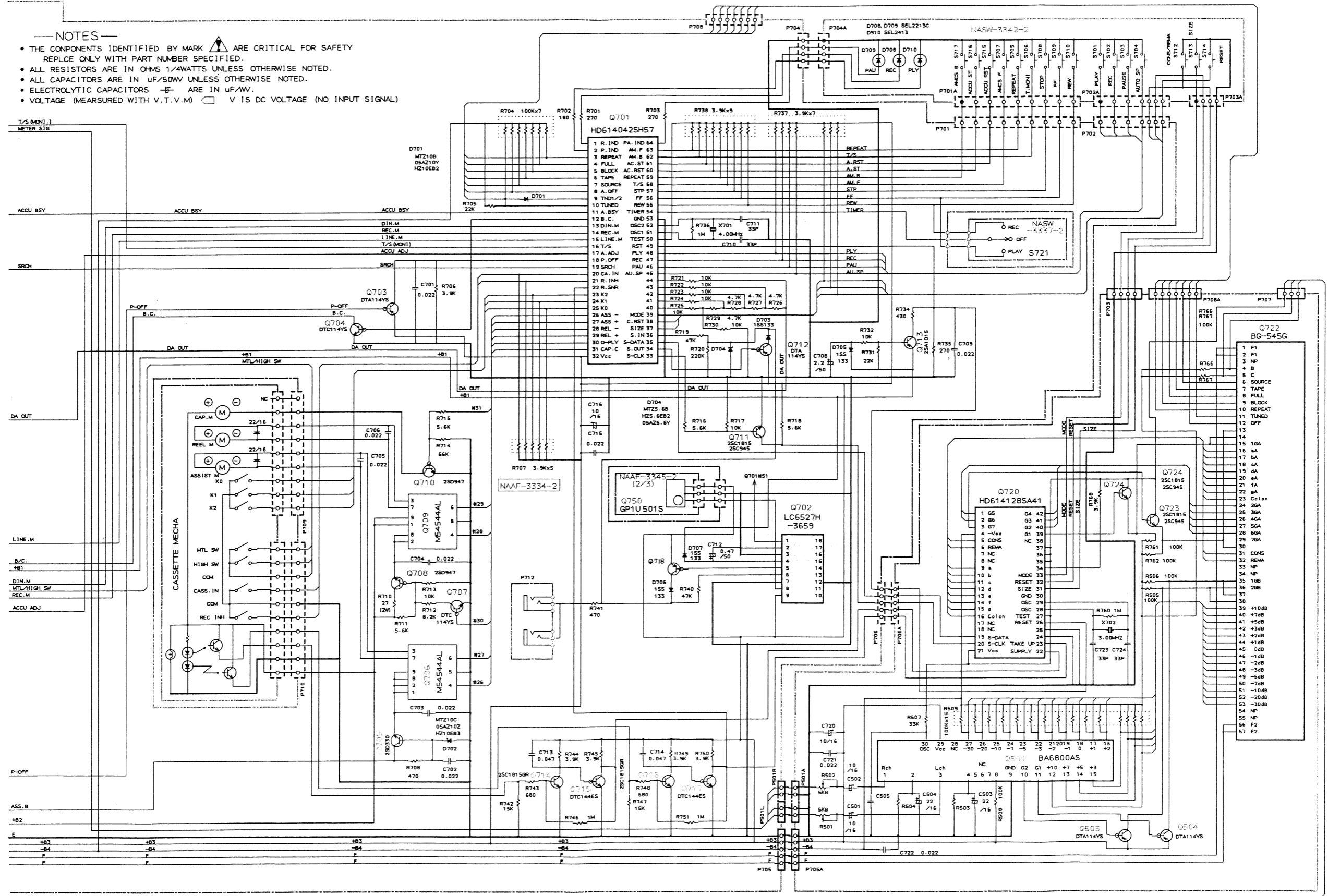
NADIS-3336-2



SCHEMATIC DIAGRAM (CONTROL SECTION) 2/2

NOTES

- THE COMPONENTS IDENTIFIED BY MARK  ARE CRITICAL FOR SAFETY. REPLCE ONLY WITH PART NUMBER SPECIFIED.
- ALL RESISTORS ARE IN OHMS 1/4WATTS UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN uF/50WV UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS  ARE IN uF/WV.
- VOLTAGE (MEASURED WITH V.T.V.M)  V IS DC VOLTAGE (NO INPUT SIGNAL)



PACKING VIEW

D MODEL

REF.NO.	PART NO.	DESCRIPTION
1	29051727	Master carton box
2	29051751A	Master carton box (PX)
3	29091264A	Pad (L)
4	29091265A	Pad (R)
5	29100105	550×680 Poly bag
6	29095012-1	500×800 Protection sheet (PX)
7	282301	Sealing hook
	260012	Damplon tape
	Accessory bag ass'y	
	29341290	Instruction manual
	2010098A	Connection cable
	29365019	Waranty card (N)
	29358002F	Service station list (N)
	25055251	Conversion plug (CV-CP) (PX)
	29100006A	350×250 Poly bag
	24140027	Remote control unit
	3010124	Battery UM-4
8	28185315-1	Side panel ass'y (PX)
9	29091298	Pad (PX)

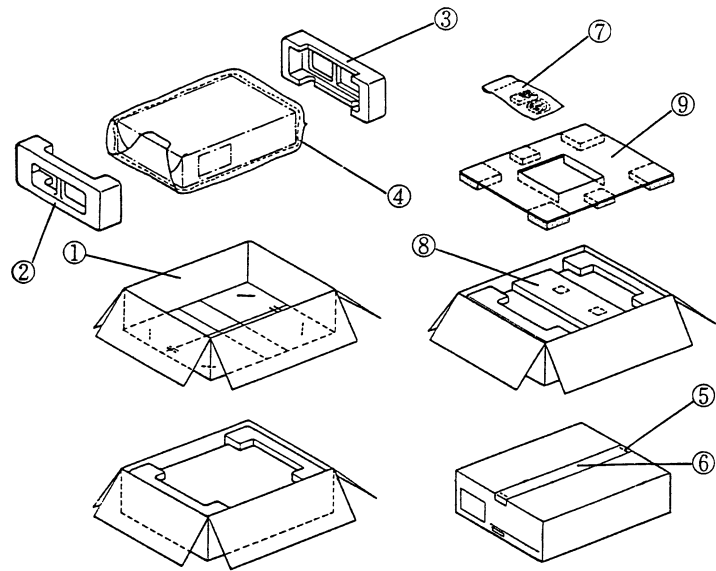
G/W MODEL

REF.NO.	PART NO.	DESCRIPTION
1	29051727	Master carton box
	29051751A	Master carton box (PX)
2	29091264A	Pad (L)
3	29091265A	Pad (R)
4	29100105	550×680 Poly bag
5	29055012-1	500×800 Protection sheet (PX)
6	282301	Sealing hook
7	260012	Damplon tape
	Accessory bag ass'y	
	29341289	Instruction manual
	29341292	Instruction manual (I)
	29365021	Waranty card (PX)
	29365022	Waranty card (QB)
	2010095	Connection cable
	25055018	Conversion plug (CV-K-2) (W)
	25055251	Conversion plug (CV-CP) (PX)
	29100006A	350×250 Poly bag
	24140027	Remote control unit
	3010124	Battery UM-4
8	28185315-1	Side panel ass'y (PX)
9	29091298	Pad (PX)

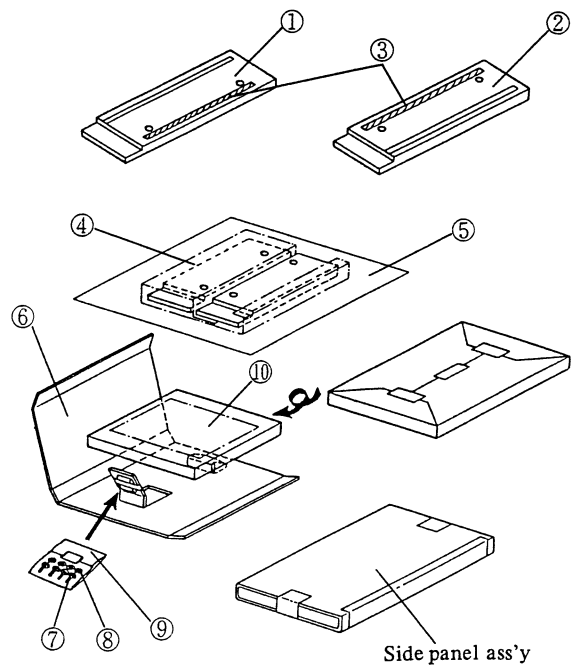
PX MODEL

REF.NO.	PART NO.	DESCRIPTION
1	28185344	Side panel (L)
2	28185345	Side panel (R)
3	28140887	Cushion
4	29095539	Protection sheet
5	29095039-1	Protection sheet
6	29051732	Carton box
7	836440303	4STV+30CQ (BC) Screw
8	870086	4×12BS (BC) Washer
9	29100026	150×80 Poly bag
10	29341018-1	Instruction manual

NOTE (D): Only 120V model
 (G): Only 220V model
 (W): Only Worldwide model
 (PX): Only P.X model



Only P.X. model



ONKYO CORPORATION

International Division: No. 24 Mori Bldg., 23-5, Nishi-Shimbashi 3-chome, Minato-ku,
 TOKYO 105, JAPAN Tel: 03-432-6987 Fax: 03-436-6979 TLX: 242-3551 ONKYO J
ONKYO U.S.A. CORPORATION
 200 Williams Drive, Ramsey, N.J. 07446, U.S.A. Tel: 201-825-7950 Fax: 201-825-8150