ONKYO SERVICE MANUAL

SERIAL NO. 3302

STEREO CASSETTE TAPE DECK

MODEL TA-2800

Black model

UDN, UDC, UD	120V AC, 60Hz
UG	220V AC, 50Hz
UW	120 or 220V AC, 50/60Hz
UQA, UQB	240V AC, 50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ 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

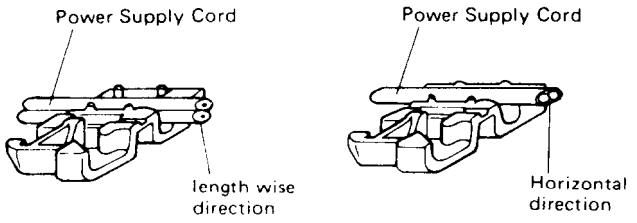
Track Format:	4-tracks, 2-channels
Erasing System:	AC erase
Tape Speed:	4.8 cm/sec. (1-7/8 i.p.s.)
Wow and Flutter:	0.04% (WRMS)
Frequency Response:	20 – 17,000Hz (Normal) (30 – 16,000Hz ±3dB) 20 – 18,000Hz (High) (30 – 17,000Hz ±3dB) 15 – 21,000Hz (Metal) (20 – 20,000Hz ±3dB)
S/N Ratio:	60dB (metal 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.



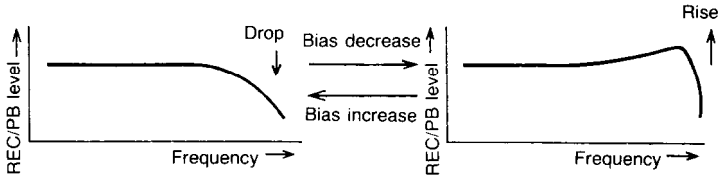
2. Insulating resistance measurement

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 causeing its reduction. When this is done, in the maner shown in the explanation of Item I 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

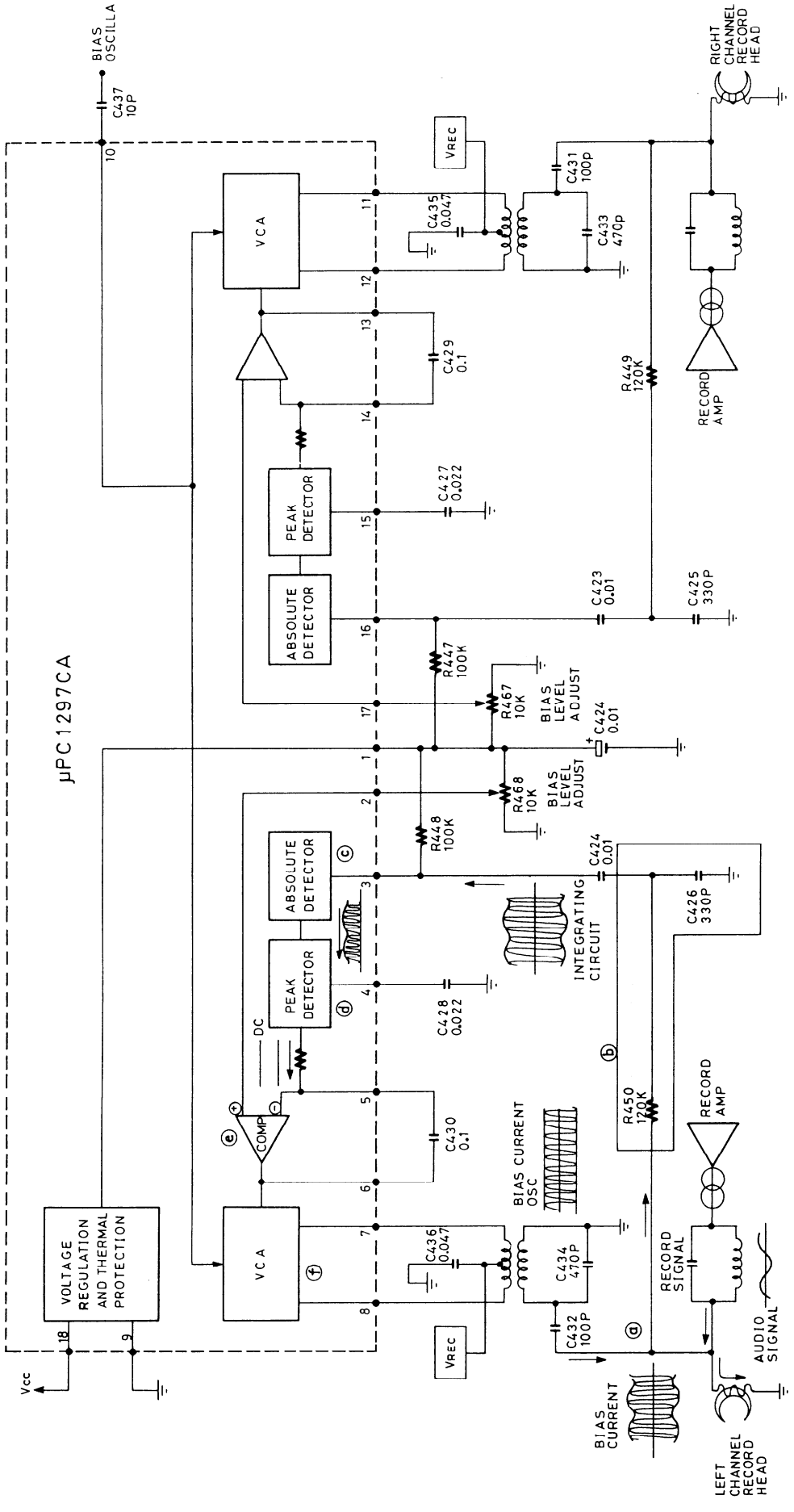
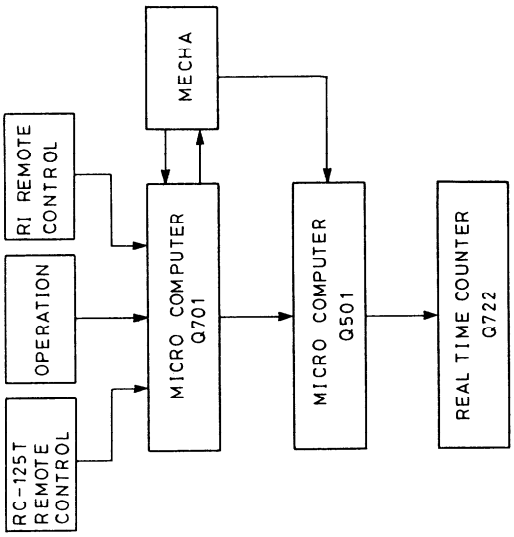
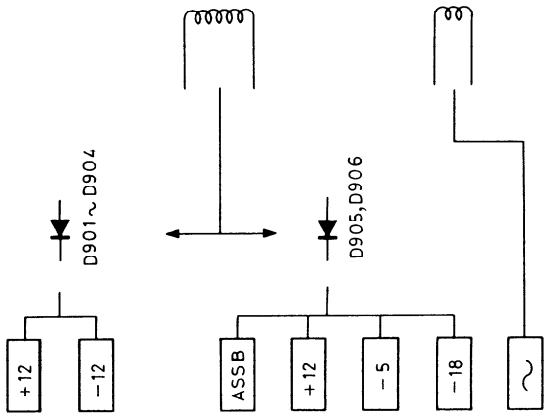
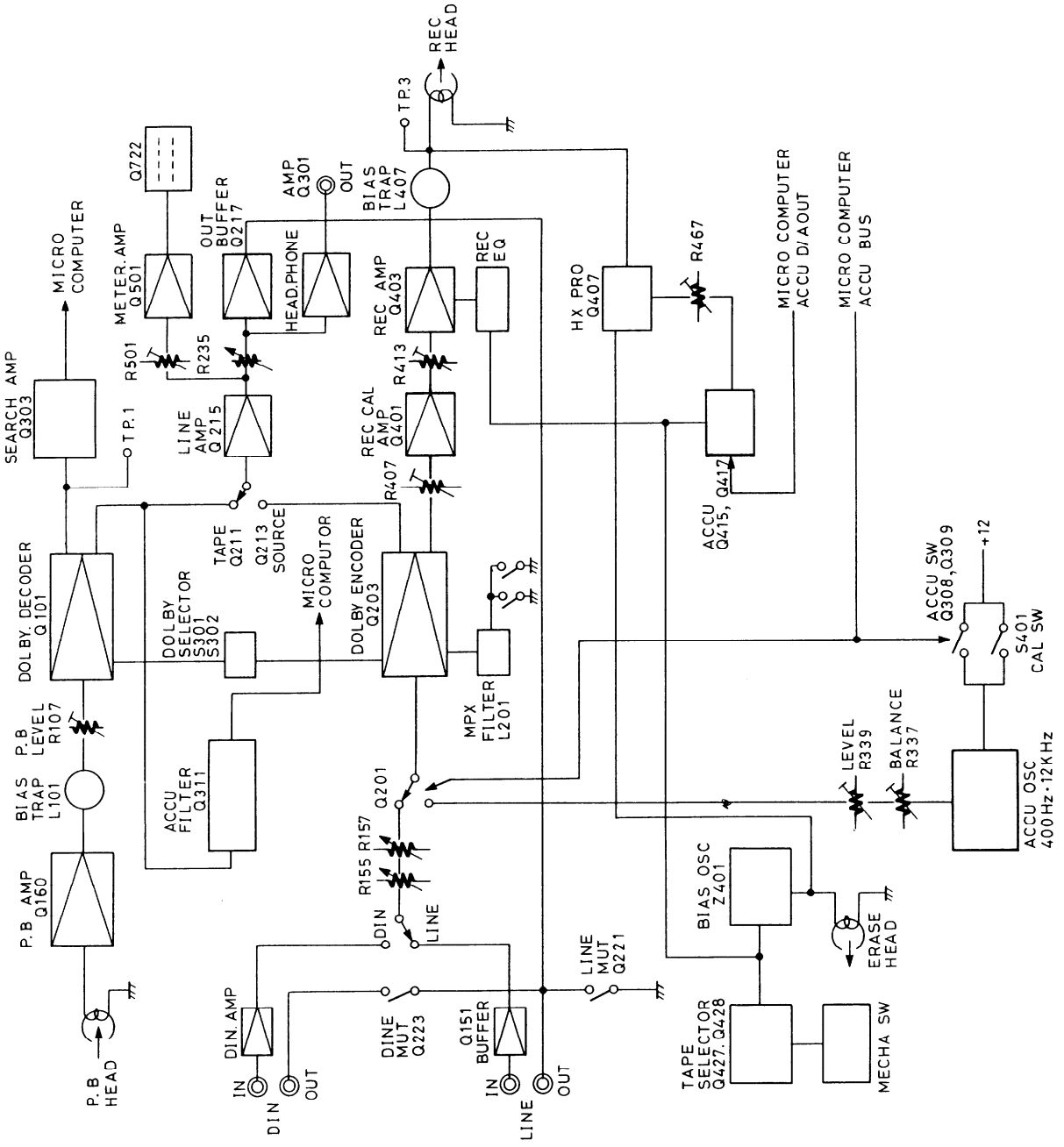


Fig. 1

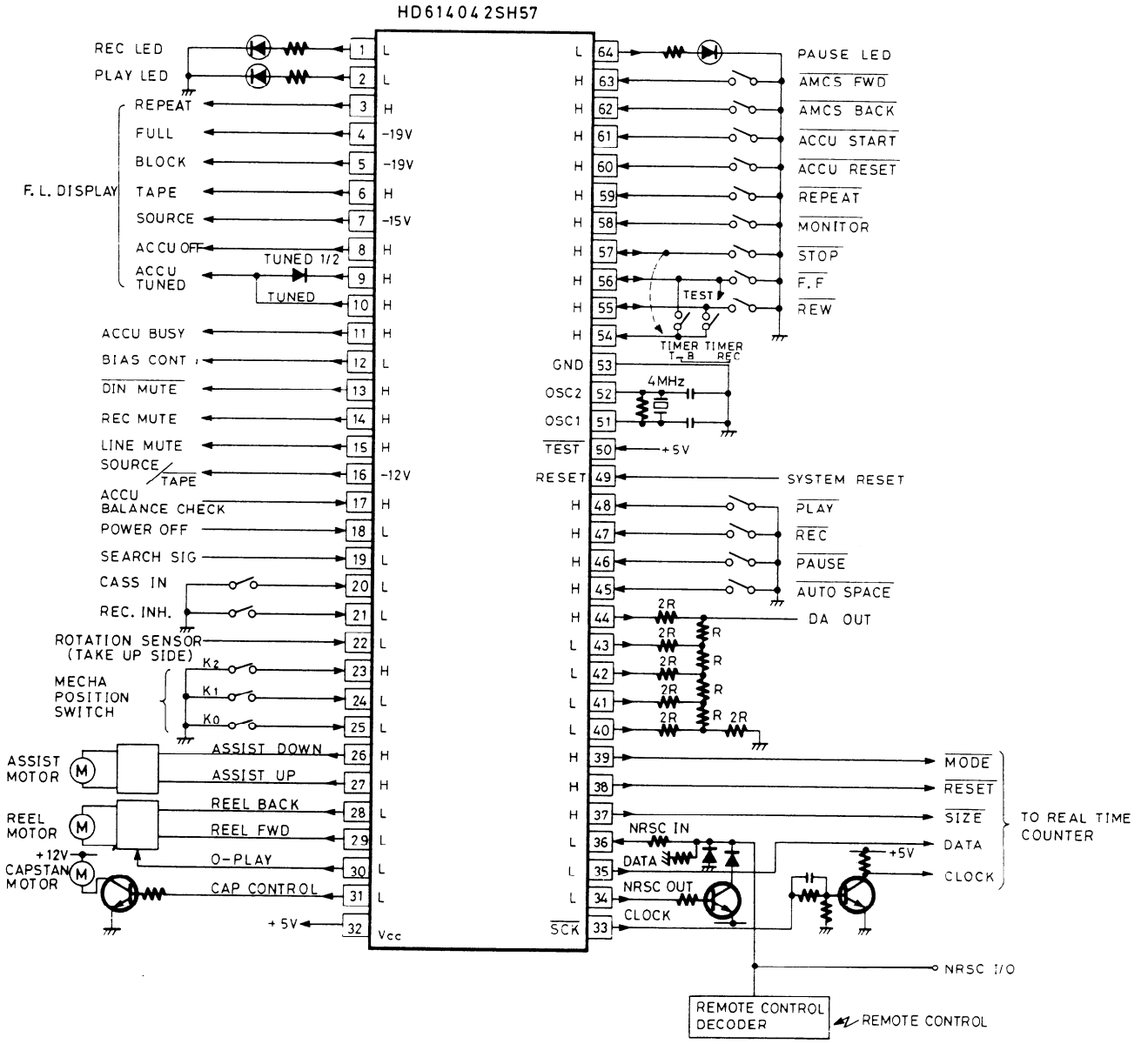
BLOCK DIAGRAM







MICRO COMPUTER (HD614042SH57)

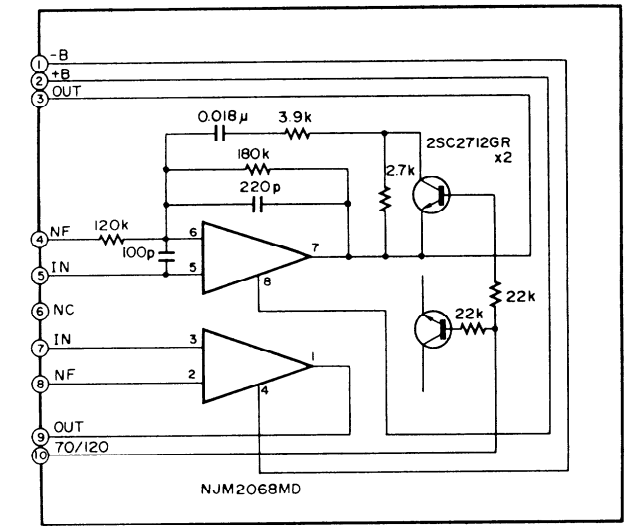


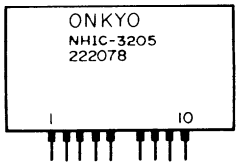
MECHANICAL POSITION CODE

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

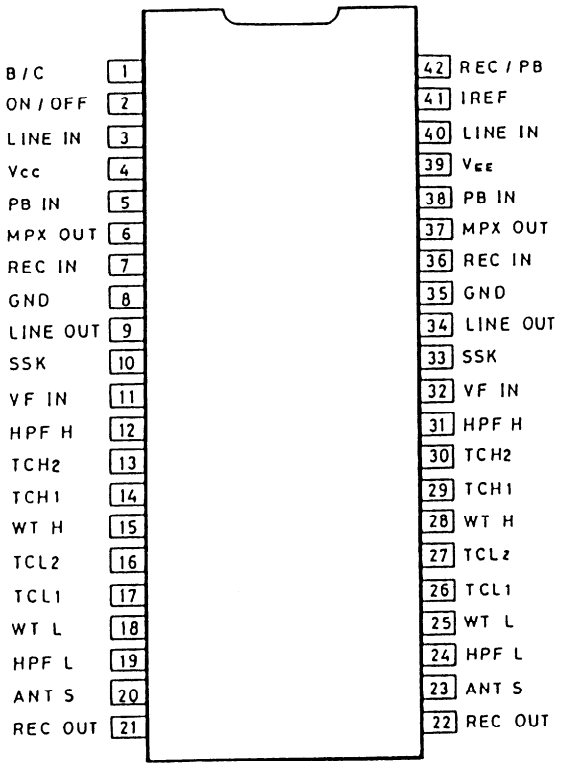
IC BLOCK DIAGRAM

NCHC-3205 (P.B. AMP)

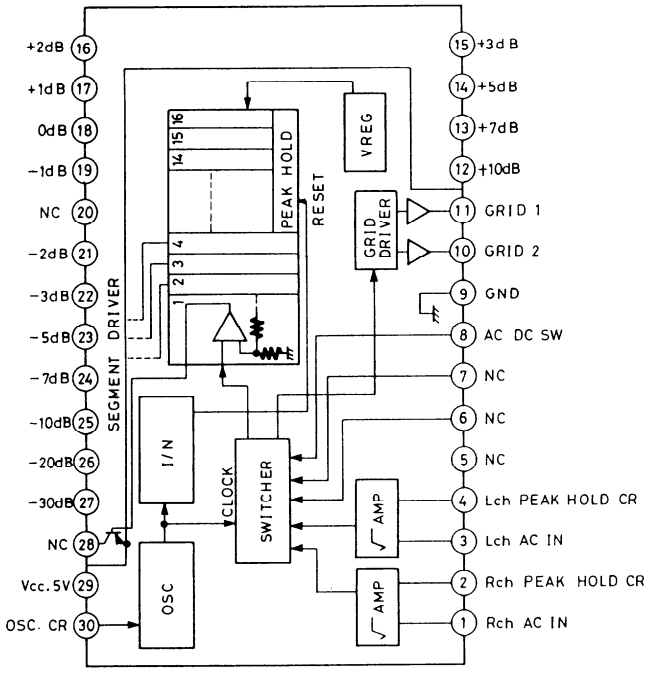




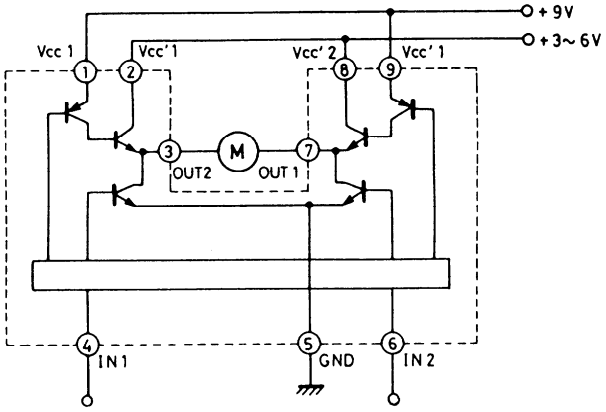
CX20187 (DOLBY N.R)



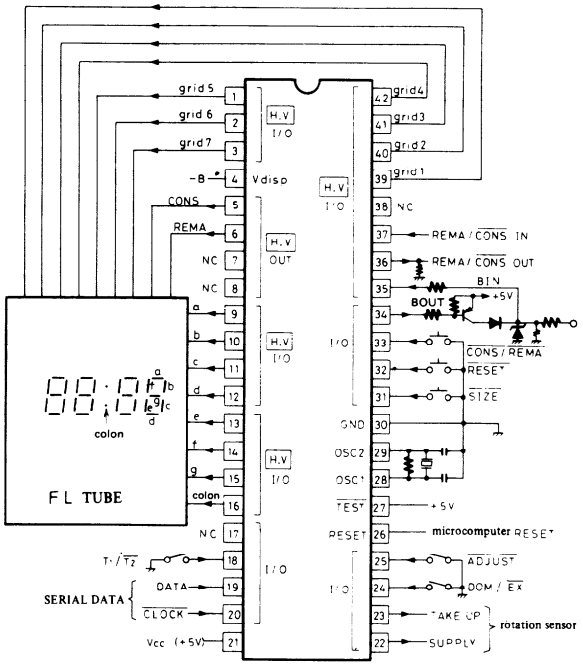
BA6800AS (METER DRIVE)



M54544AL (MOTOR DRIVE)



HD614128SA41 (COUNTER)



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	$T_1/\overline{T_2}$	Microcomputer $T_1/\overline{T_2}$ function selection input (With T_2, system I/O receiving)
19	DATA	Deck mechanism status input (8 bit serial data) from mechanism control microcomputer
20	$\overline{CLOCK}$	Clock input for reading above DATA (DATA taken on pulse wave dropping)
21	Vcc	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/$\overline{EX}$	Domestic/export setting use selector input (Tape size type selector use) Domestic: With power ON C46 → C54 → C60 → C80 → C90 → C120
25	$\overline{ADJUST}$	Remaining time calculation buffer compensating value input (normally open, compensating ground)
26	RESET	Microcomputer system reset
27	$\overline{TEST}$	Microcomputer internal test use port, normally connected to Vcc
28, 29	OSC1, OSC2	Microcomputer clock oscillator terminal
30	GND	Microcomputer power source (GND)
31	$\overline{SIZE}$	Tape size selector input
32	$\overline{RESET}$	Lapsed time reset input (When [CONS] displays, digits are □ : □ □)
33	$\overline{CONS/REMA}$	Lapsed time ← → remaining time selector input (toggle display)
34	$\overline{BOUT}$	System bus output
35	BIN	System bus input
36	REMA/$\overline{CONS}$ OUT	Remaining time display/lapsed time display status output (when $\overline{T_2}$)
37	REMA/$\overline{CONS}$ IN	Remaining time display/lapsed time display status input (when $\overline{T_2}$)
39 ~ 42	Grid 1 ~ 4	FL tube grid (DIGIT) drive use output

ADJUSTMENT PROCEDURES

PRECAUTIONS

1. Before adjustment, clean the following parts with an alchol moinstend swab.
   * record/playback head
   * erase head
   * pinch roller
   * capstan
2. Do not use magnetized screwdriver for adjustments.
3. 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	Remaks
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 oscillo-scope 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)	Minimun	
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	Attenutor 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

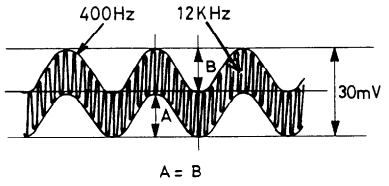
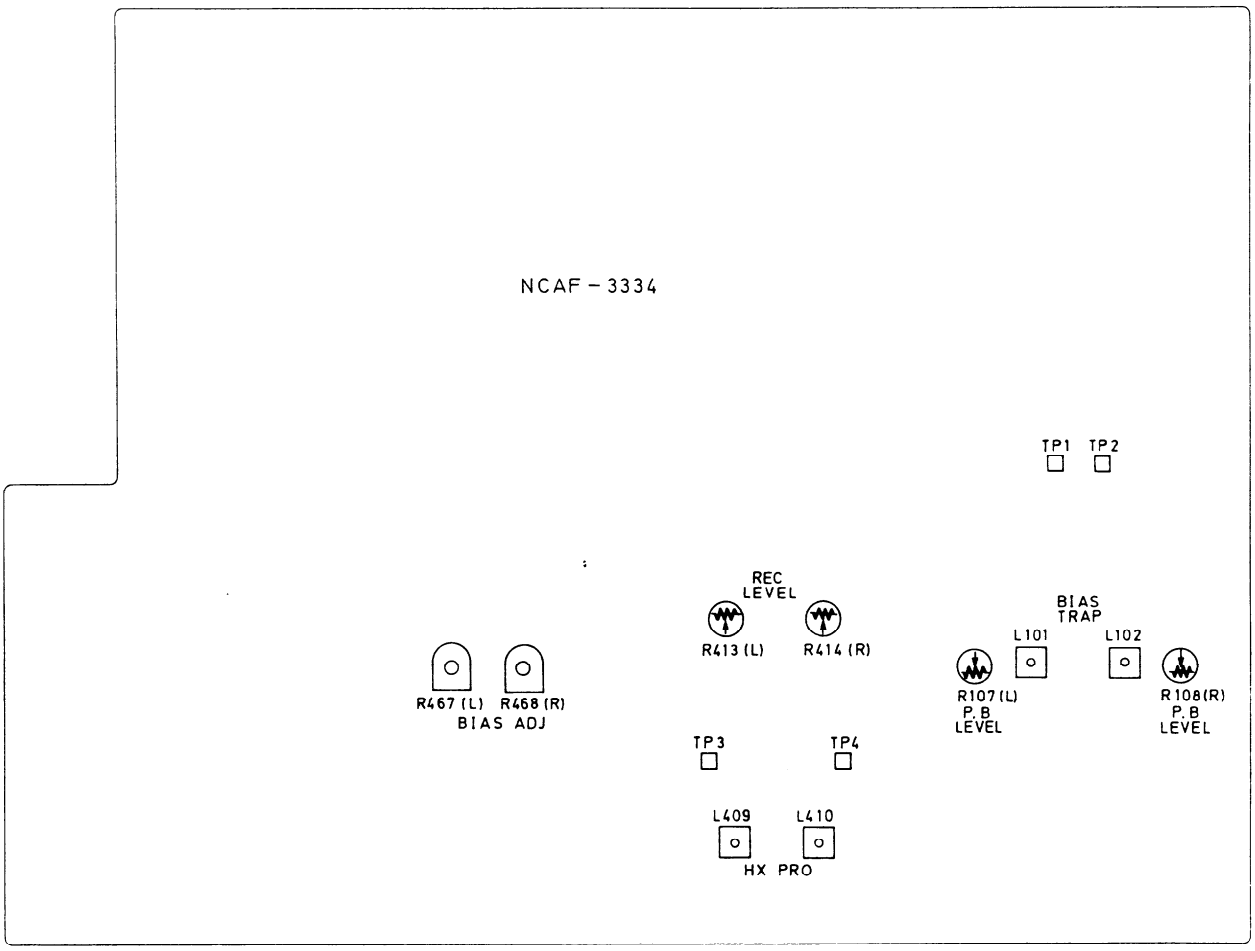
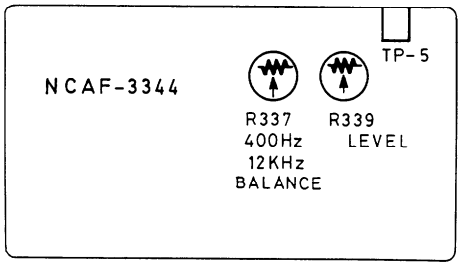
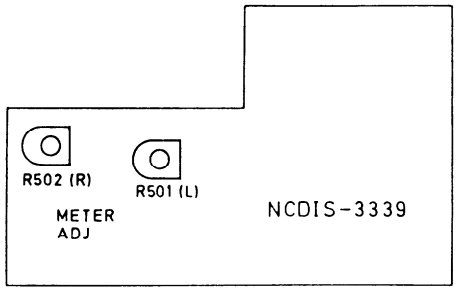
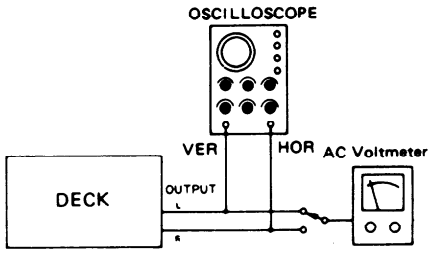


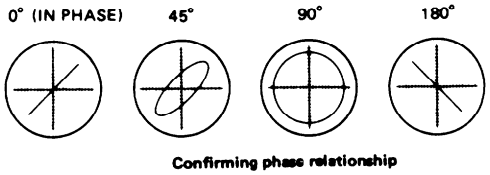
fig-3











Confirming phase relationship

fig-1

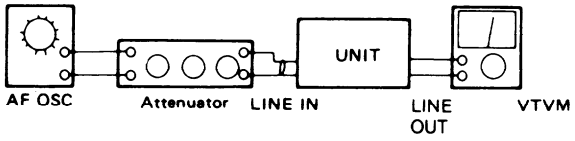
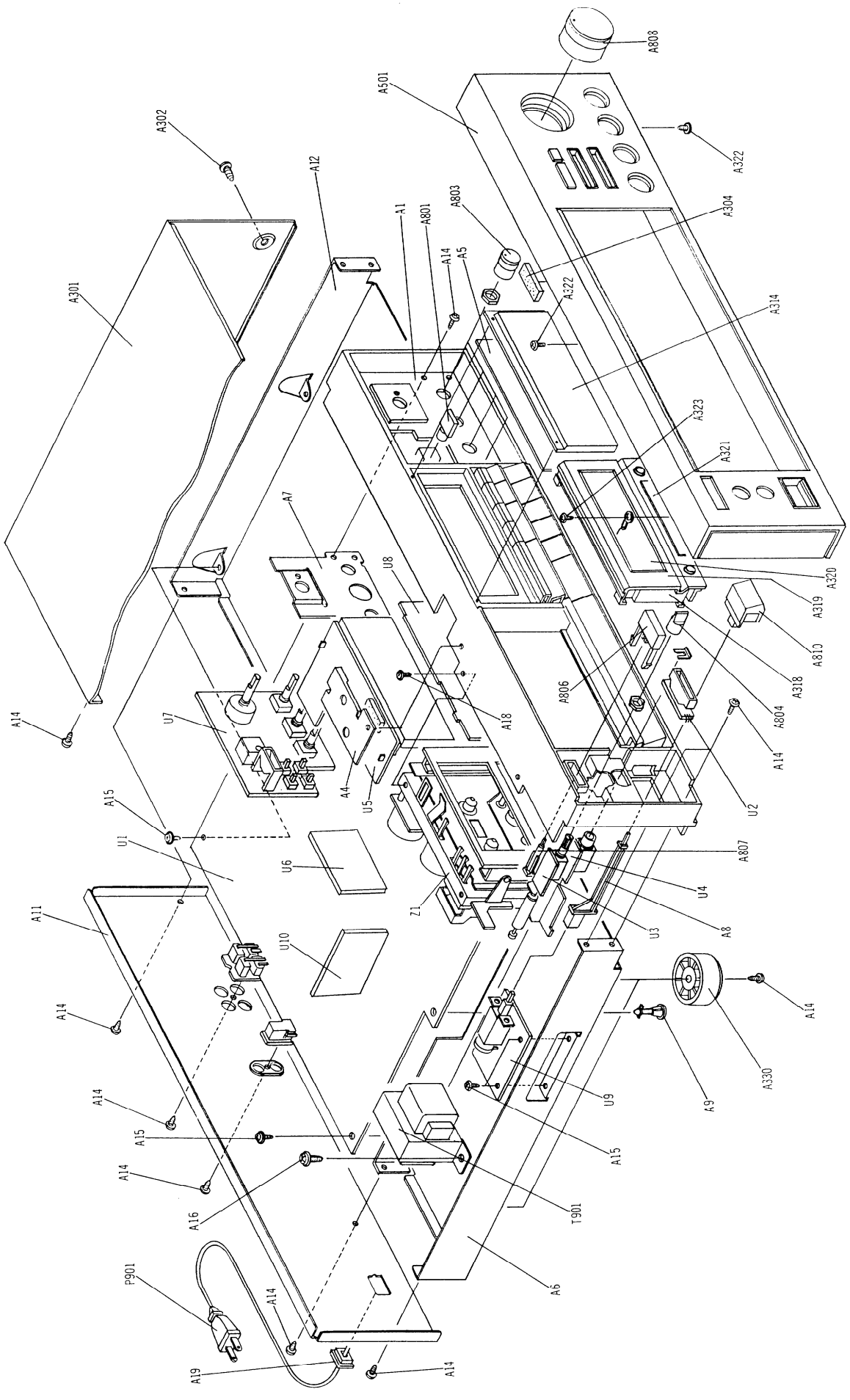


fig-2

CHASSIS-EXPLODED VIEW



CHASSIS-EXPLODED VIEW PARTS LIST

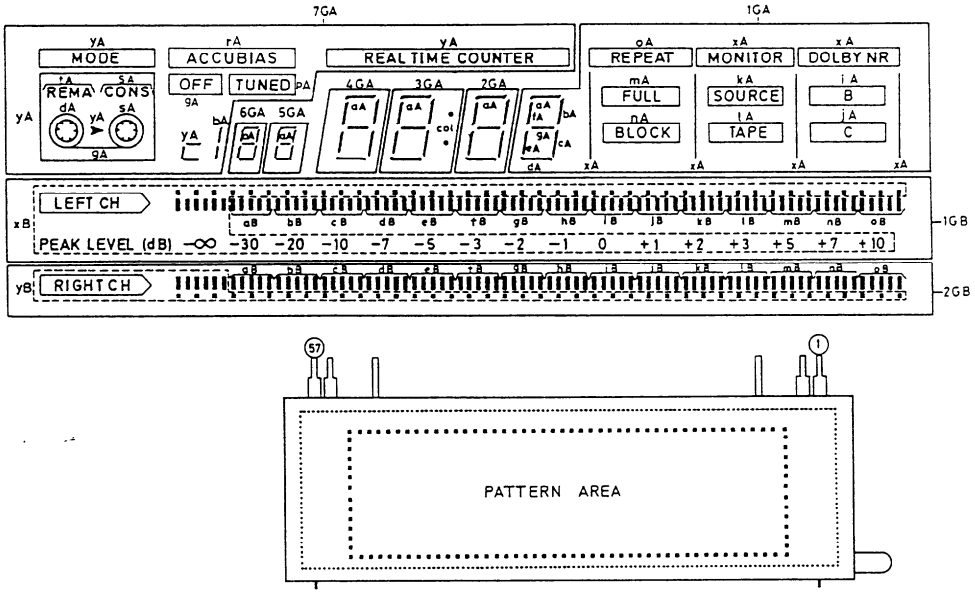
REF.NO.	PART NO.	DESCRIPTION
A1	27110430C	FRONT BRACKET AS
A4	27141273	BRACKET (PC)
A5	28133200	BACK PLATE CR033
A6	27130536A	BRACKET (PT)
A7	27130541A	BRACKET (VOL)
A8	27273069A	JOINT (POW)
A9	27190524	HOLDER
A11	27121146A	BACK PANEL (D)
	27121147	BACK PANEL (G)
	27121148	BACK PANEL (W)
	27121181	BACK PANEL (Q)
A12	27100164B	CHASSIS
A14	834430088	TAP-TIGHT SCREW 3TTS+8B(BC)
A15	831130088	TAP-TIGHT SCREW 3TTW+8B
A16	830440109	TAP-TIGHT SCREW 4TTC+10C(BC)
A18	838426088	TAP-TIGHT SCREW 2.6TTB+8B
A19	27300750	BUSHING (CORD)
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	AC CORD AS-UC-4 (D)(PX)
	253149	AC CORD AS-CEE (G/W)
	253104	AC CORD C2.5BS2 (Q)

REF.NO.	PART NO.	DESCRIPTION
⚠ S902	25065123	NSS-1258P (W)
⚠ T901	2300335	NPT-1003D (D)
	2300336	NPT-1003G (G)
	2300337	NPT-1003DG (W)
	2300359	NPT-1003Q (Q)
U1	1N048534-2	NAAF-3334-2 (D/W/Q)
	1N048534-2A	NAAF-3334-2A (G)
U2	1N048536-2	NADIS-3336-2
U3	1N048537-2	NASW-3337-2
U4	1N048538-2	NAETC-3338-2
U5	1N048539-2	NADIS-3339-2
U6	1N048540-2	NAAF-3340-2
U7	1N048545-2	NAAF-3345-1
U8	1N048542-1	NASW-3342-2
U9	1N048543-2	NASW-3343-2
U10	1N048544-2	NAAF-3344-1
Z1	244116	NDM-108, CASSETTE DECK MECHANISM

NOTE:
<D>:Only 120V model
<G>:Only 220V model
<W>:Only Worldwide model
<Q>:Only 240V model
<PX>:Only P.X. model

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	nB	oB	yB	xB	2GB	1GB	NP	NP	tA	sA	yA	7GA	6GA	5GA	4GA	3GA	2GA	hA	gA	fA	eA	dA	cA	bA	aA	1GA	xA	rA	qA	pA	oA	nA	mA	lA	kA	jA	iA	NP	F1	F1

PIN NO.	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
CONNECTION	F2	F2	NP	NP	aB	bB	cB	dB	eB	fB	gB	hB	iB	jB	kB	lB	mB

	Resistor	
R501, R502	5215020	NO8HR5KBC
R509	49163104415	100k×15, 1/10W
	Socket, plug	
P501A	2000879	NSAS-8P835
P703	25055226	NPLG-4P210
P705A	2000757	NSAS-10P713
P706A	2000649	NSAS-10P605
P707	25055225	NPLG-3P209
P708A	2000884	NSAS-14P840
	Bracket	
	27130539A	BRACKET(FL)

NAAF-3340-2

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistor	
Q409-Q414	2211255 or	2SC1815GR or
	2210746	2SC945A-P
	Coil	
L401, L402	233194 or	NCH-1039 or
	231089	NCH-2137
L403, L404	24606069 or	NCH-1007 or
	231084	NCH-2132
L405, L406	24606080 or	NCH-1022 or
	231083	NCH-2131
	Plug	
P403	25055317	NPLG-3P300
P404	25055319	NPLG-5P302

NAAF-3345-1

CIRCUIT NO.	PART NO.	DESCRIPTION
Q750	24130001	GP1U501S
Q751	221281	DTC114YS
D311	225137CG,	SEL2413CG,
	225137DG or	SEL2413DG or
	225137DY	SEL2413DY
	Resistor	
R155	5104239	N12RGLC5KMN25Z
R157	5104241	N16RGL5KA25Z
R235	5104238	N12RGL5KA25Z
R407, R408	5104240	N12RGLC5KB25Z
	Switch	
S301-S303	25035514	NPS-122-L476, PUSH
S401	25035515	NPS-142-L477, PUSH
	Socket	
P107A	2000877A	NSAS-6P833
P108A	2000876A	NSAS-6P832
P201A	2000886	NSAS-12P842
P307A	2000776	NSAS-10P732
P401A	2000887	NSAS-12P843
P402A	2000885	NSAS-10P841
P707A	2000875	NSAS-6P831
P711A	2000490	NSAS-6P446
	Holder	
	27190650	HOLDER(LED)

NASW-3342-2

CIRCUIT NO.	PART NO.	DESCRIPTION
	LED	
D708, D709	225141	SEL2213C
D710	225137CG,	SEL2413CG,
	225137DG or	SEL2413DG or
	225137DY	SEL2413DY
	Switch	
S701-S710	25035548	NPS-111-S510, PUSH
S712-S717	25035548	NPS-111-S510, PUSH
	Socket	
P701A	2000883	NSAS-18P839
P702A	2000818	NSAS-14P774
P703A	2000665	NSAS-8P621
P704A	2000571	NSAS-8P527
	Holder	
	27190649	HOLDER(LED3)

NASW-3343-2

CIRCUIT NO.	PART NO.	DESCRIPTION
C901	3500065A	0.01μ, AC400V, CAPACITOR IS.
S901	25035558	NPS-111-L520P, PUSH
	25060092	NMT-1S33, TERMINAL

NASF-3344-1

CIRCUIT NO.	PART NO.	DESCRIPTION
	Ic	
Q311	222681 or	IR3702 or
	22240040	NJM2902N
	Transistor	
Q306, Q307	2211255 or	2SC1815GR or
	2210746	2SC945A-P
Q321	2211255 or	2SC1815GR or
	2210746	2SC945A-P
	Diode	
D304-D307	223132	1K60
D308	223163	1SS133
D309	224450511,	MTZ5.1B,
	224150511 or	05AZ5.1Y or
	224650511	HZ5.1EB2
	Capacitor	
C310	354780339	3.3μF50V, ELECT.
C311	354741009	10μF16V, ELECT.
C315-317	354741009	10μF16V, ELCT.
C320	354780479	4.7μF50V, ELECT.
C321	354742209	22μF16V, ELECT.
C324	354784799	0.47μF50V, ELECT.
C325	354741009	10μF16V, ELECT.
	Resistor	
R337	5215036	N08HR100KBA
R339	5215031	N08HR1KBA
	Plug	
P305	25055318	NPLG-4P301
P306	25055319	NPLG-5P302

NOTE (G): Only 220V model

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	4066B or	
	222933	BU-4066B	
Q203	222999	CX-20187	
Q215	222502	NJM-4558DX	
Q217	222921 or	BA4558 or	
	222465	NJM-4558D	
Q301	22240111 or	BA15218 or	
	222808	M5218P	
Q303	222940	BA335H	
Q401	222502	NJM-4558DX	
Q403	22240111 or	BA15218 or	
	222808	M5218P	
Q407	222959	μPC1297CA	
Q415, Q417	222921 or	BA4558 or	
	222465	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	2SC1815-GR or	
	2210746	2SC945-AP	
Q104	2211455 or	2SA1015-GR or	
	2212495	JA101Q	
Q153, Q154	2211406 or	2SC2240-BL or	(G)
	2211896	2SC1815LL	
Q155, Q156	2211455 or	2SA1015-GR or	(G)
	2212495	JA101Q	
Q205-Q209	2211255 or	2SC1815-GR or	
	2210746	2SC945-AP	
Q210	2211455 or	2SA1015-GR or	
	2212495	JA101Q	
Q211-Q214	2212304 or	2SK381-D or	
	2211945	2SK246-GR	
Q219, Q220	2211255 or	2SC1815-GR or	
	2210746	2SC945-AP	
Q221, Q222	2211706	2SD655-F	
Q223, Q224	2212304 or	2SK381-D or	(G)
	2211945	2SK246-GR	
Q225, Q226	221281	DTC114YS	
Q227	2211455 or	2SA1015-GR or	
	2212495	JA101Q	
Q304	221282	DTC144ES	
Q305	2211255 or	2SC1815-GR or	
	2210746	2SC945-AP	
Q308	2213090	DTA114YS	
Q309	221282	DTC144ES	
Q315	221282	DTC144ES	
Q405, Q406	2212794 or	2SD1468-R or	
	2212795	2SD1468-S	
Q419-Q421	221282	DTC144ES	
Q422	2211455 or	2SA1015-GR or	
	2212495	JA101Q	
Q423, Q424	221282	DTC144ES	
Q425	2201540	2SD947	
Q426-Q428	2211455 or	2SA1015-GR or	
	2212495	JA101Q	
Q703	2213090	DTA114YS	
Q704	221281	DTC114YS	
Q705	2201385	2SD330-E	
Q707	221281	DTC114YS	
Q708	2201540	2SD947	
Q710	2201540	2SD947	
Q711	2211255 or	2SC1815-GR or	
	2210746	2SC945-AP	
Q712	2213090	DTA114YS	
Q713	2211455 or	2SA1015-GR or	
	2212495	JA101Q	
Q714	2211255 or	2SC1815-GR or	
	2210746	2SC945-AP	
Q715	221282	DTC144ES	
Q716	2211255 or	2SC1815-GR or	
	2210746	2SC945-AP	
Q717	221282	DTC144ES	
Q718	2213090	DTA114YS	
Q903	2211455 or	2SA1015-GR or	
	2212495	JA101Q	
Q904	2201924 or	2SD1761-E or	
	2201385	2SD330-E	
Q905	2211255 or	2SC1815-GR or	
	2210746	2SC945-AP	
	Diodes		
D101, D102	224450822,	MTZ8.2B,	
	224150822 or	05AZ8.2Y or	
	224650822	HZ8.2EB2	
D151-D154	223163	1SS133	
D201, D202	224450822,	MTZ8.2B,	
	224150822 or	05AZ8.2Y or	
	224650822	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,	MTZ10B,	
	224151002 or	05AZ10Y or	
	224651002	HZ10EB2	
D702	224451003,	MTZ10C,	
	224151003 or	05AZ10Z or	
	224651003	HZ10EB3	
D703	224450562,	MTZ5.6B,	
	224150562 or	05AZ5.6Y or	
	224650562	HZ-5.6E-B2	
D704-D707	223163	1SS133	
D901-D906	22380006 or	1N4003 or	
	223894	1N4002F	
D907	224452001,	MTZ20A,	
	224152001 or	05AZ20X or	
	224652001	HZ20EB1	
D908	224450511,	MTZ5.1A,	
	224150511 or	05AZ5.1X or	
	224650511	HZ5.1EB1	
D909	22380006 or	1N4003 or	
	223894	1N4002F	
D910	224451501,	MTZ15A,	
	224151501 or	05AZ15X or	
	224651501	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	

	Ceramic OSC	
X701	3010099 or	CSA-4.00MG or
	3010128	PRS-4.00RM11
	Capacitors	
C103, C104	354722219	220μF6.3V, ELECT.
C105, C106	354741009	10μF16V, ELECT.
C107, C108	354741009	10μF16V, ELECT.
C115, C116	354744719	470μF16V, ELECT.
C139, C140	354741009	10μF16V, ELECT.
C141, C142	354741019	100μF16V, ELECT.
C143, C144	354742219	220μF16V, ELECT.
C147	354742209	22μF16V, ELECT.
C151, C152	392880107	1μF50V, LL.
C153, C154	392880107	1μF50V, LL. (G)
C155, C156	354782299	0.22μF50V, ELECT. (G)
C157, C158	354741019	100μF16V, ELECT. (G)
C163, C164	354780479	4.7μF50V, ELECT.
C201, C202	354780479	4.7μF50V, ELECT.
C203, C204	352950476	4.7μF25V, NP.
C229, C230	354741009	10μF16V, ELECT.
C231, C232	354741009	10μF16V, ELECT.
C233, C234	354741019	100μF16V, ELECT.
C235, C236	354742219	220μF16V, ELECT.
C237	354780479	4.7μF50V, ELECT.
C241, C242	354741009	10μF16V, ELECT.
C245	354780229	2.2μF50V, ELECT.
C246	354744709	47μF16V, ELECT.
C247, C248	354780479	4.7μF50V, ELECT.
C249	354741009	10μF16V, ELECT.
C251, C252	354741009	10μF16V, ELECT.
C301, C302	354741009	10μF16V, ELECT.
C303	354780229	2.2μF50V, ELECT.
C305	354782299	0.22μF50V, ELECT.
C306	354784799	0.47μF50V, ELECT.
C327	354780479	4.7μF50V, ELECT.
C328	354741009	10μF16V, ELECT.
C401, C402	354741009	10μF16V, ELECT.
C403, C404	354780479	4.7μF50V, ELECT.
C405, C406	354782299	0.22μF50V, ELECT.
C407, C408	354780479	4.7μF50V, ELECT.
C431, C432	370131014S	100PF 100V, APS
C433, C434	370134714S	470PF 100V, APS
C438, C439	354741009	10μF16V, ELECT.
C440, C441	354722219S	220μF3.6V, ELECT.
C442-C444	354780479	4.7μF50V, ELECT.
C708	354780479	4.7μF50V, ELECT.
C712	354784799	0.47μF50V, ELECT.
C716	354741009	10μF16V, ELECT.
C902, C903	354752229S	2200μF25V, ELECT.
C904, C905	354784799	0.47μF50V, ELECT.
C906, C907	354780479	4.7μF50V, ELECT.
C908	354751029S	1000μF25V, ELECT.
C909	354741019	100μF16V, ELECT.
C910	354744709	47μF16V, ELECT.
C911	3504168	13000μF25V, ELECT.
C912, C913	354784799	0.47μF50V, ELECT.
C914	354780479	4.7μF50V, ELECT.
	Resistors	
R107, R108	5210062	N06HR 4.7KBD
R413, R414	5210062	N06HR 4.7KBD
R467, R468	5215045 or	N08HR 10KBC or
	5215021	N08HR 10KBC
R473	442525604	RS1/2WBJ 56Ω
R476	442525604	RS1/2WBJ 56Ω
R704	49163104407	100kΩ×7, 1/10W, NETWORK
R707	49163392405	3.9kΩ×5, 1/10W, NETWORK
R710	441722704	RS 2 WBJ 27Ω
R737	49163392407	3.9kΩ×7, 1/10W, NETWORK
R738	49163392409	3.9kΩ×9, 1/10W, NETWORK
R903, R904	442522294	RS1/2WBJ 0.22Ω
R905	442520224	RS1/2WBJ 2.2Ω
R908	441724704	RS 2 WBJ 47Ω
R909	442520104	RS1/2WBJ 1.0Ω
	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	SEL2913K, LED
	27190499A	HOLDER(LED), POW

NASW-3337-2

CIRCUIT NO.	PART NO.	DESCRIPTION
S721	25030305	NRS-123-15MP, TIMER SWITCH

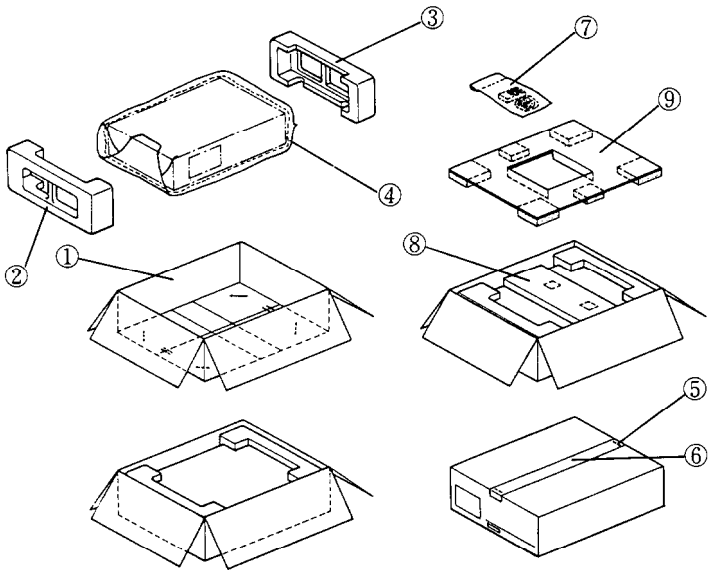
NAETC-3338-2

CIRCUIT NO.	PART NO.	DESCRIPTION
P301	25045139	HLJ0504-01-010

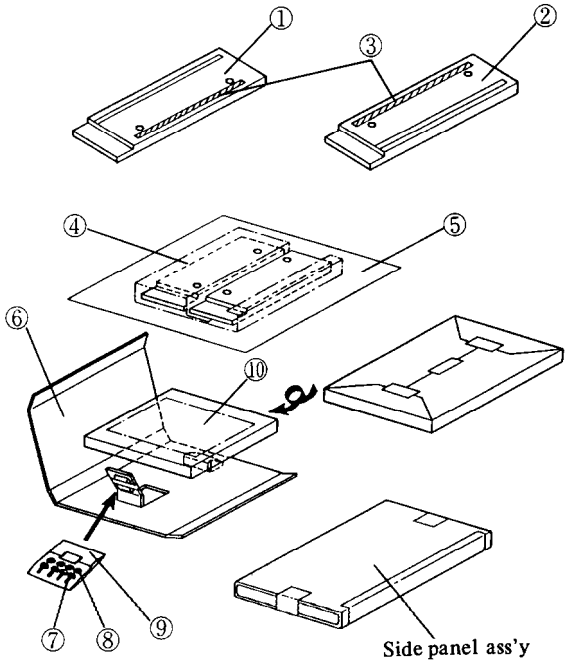
NADIS-3339-2

CIRCUIT NO.	PART NO.	DESCRIPTION
	Ic	
Q501	22240170	BA6800AS
Q720	22240084	HD614128SA41
	Display tube	
Q722	212057	BG-545G
	Transistor	
Q503, Q504	2213090	DTA114YS
Q723, Q724	2211255 or	2SC1815GR or
	2210746	2SC945A-P
	Ceramic OSC	
X702	3010118 or	CSA3.00MG or
	3010129	PRS-3.00RM03
	Capacitor	
C501, C502	354741009	10μF16V, ELECT.
C503, C504	354742209	22μF16V, ELECT.
C720	354741009	10μF16V, ELECT.

PACKING VIEW



Only P.X. model



D 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
	29095012-1	500×800 Protection sheet (PX)
5	282301	Sealing hook
6	260012	Damplon tape
7	Accessary 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

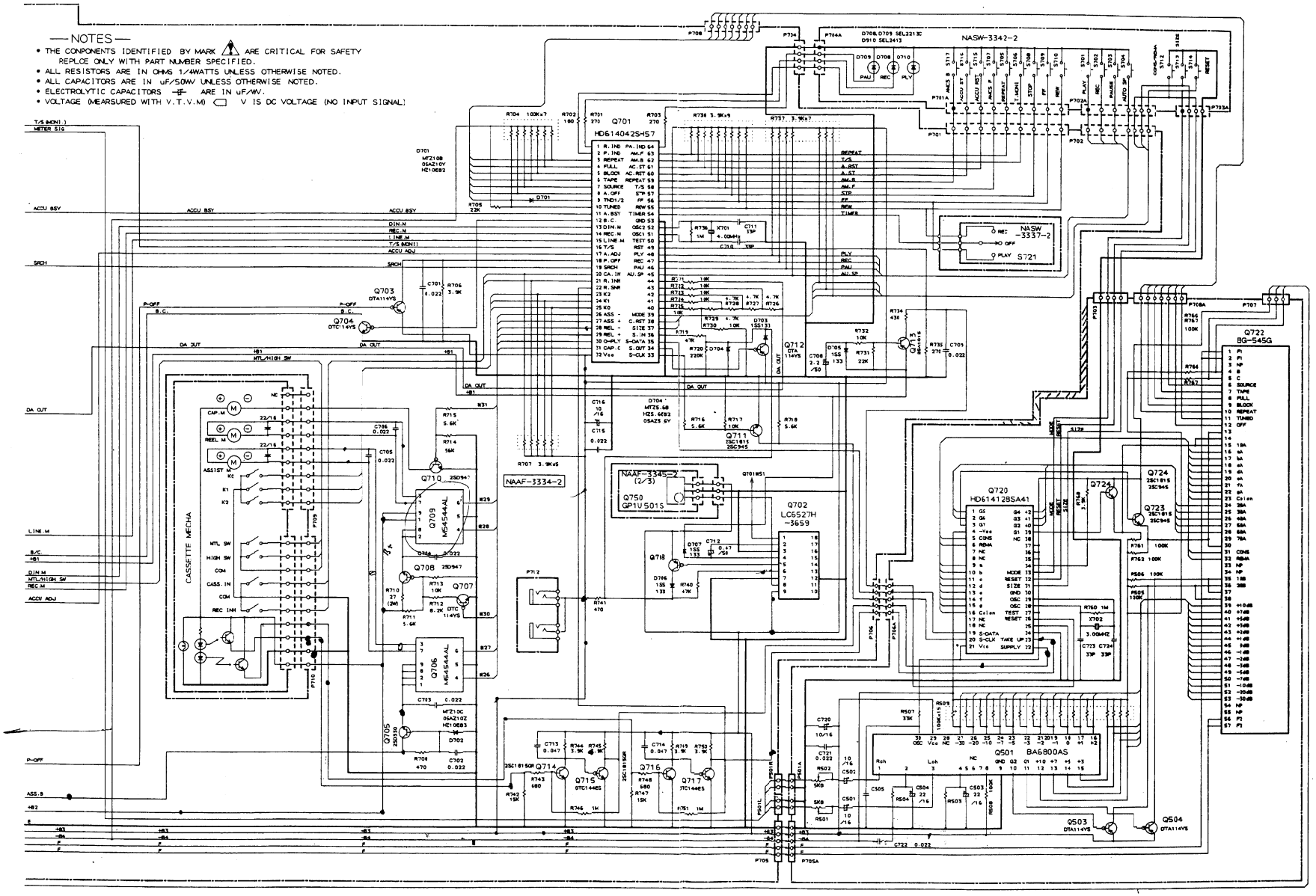
REF.NO.	PART NO.	DESCRIPTION
1	29051727	Master carton box
	29051751A	Master carton box (PX)
2	29091264A	Pad (L)
3	29091265A	Pad (R)
4	29100105	550×680 Poly bag
	29055012-1	500×800 Protection sheet (PX)
5	282301	Sealing hook
6	260012	Damplon tape
7	Accessary bag ass'y	
	29341289	Instruction manual
	29341292	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

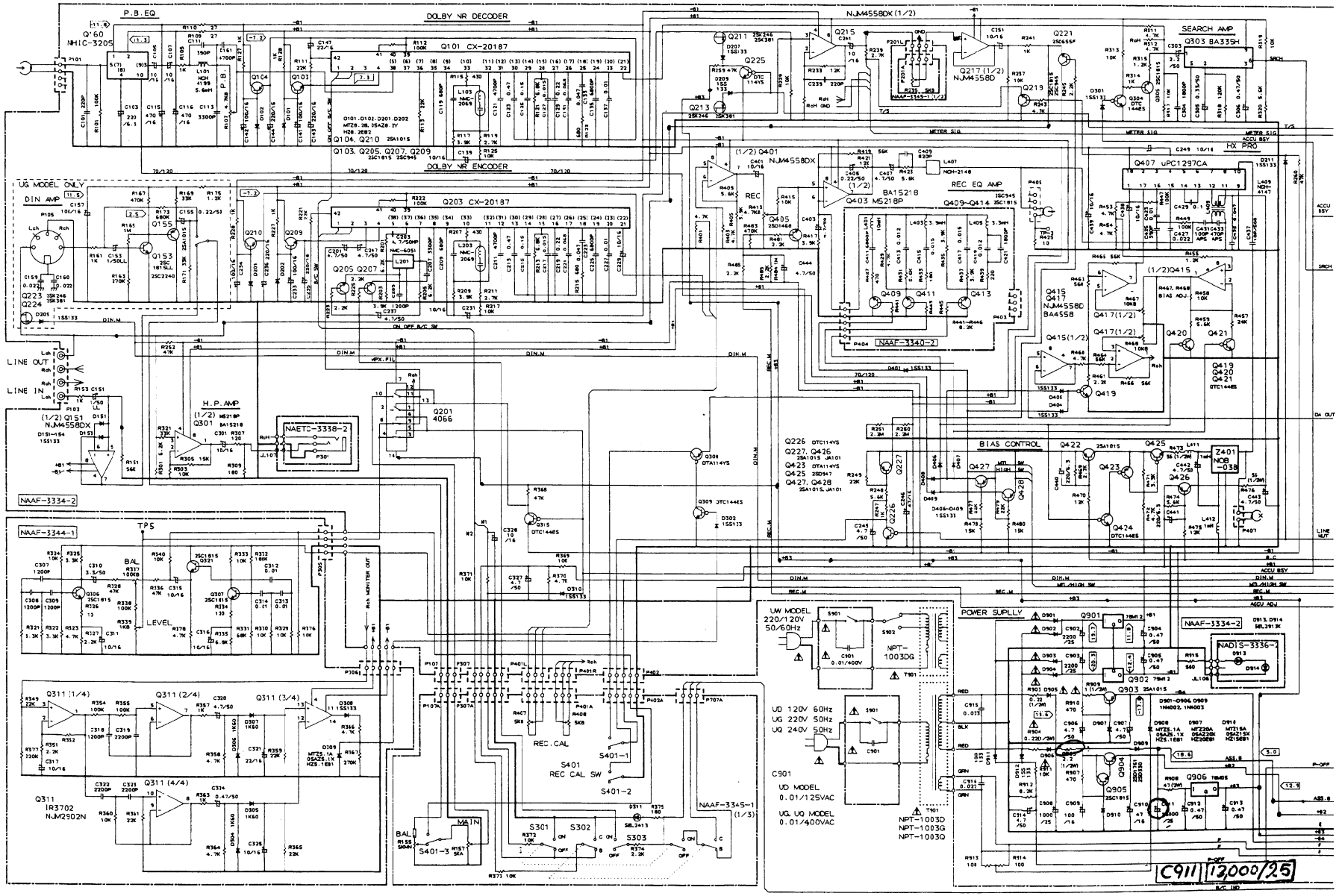
REF.NO.	PART NO.	DESCRIPTION
1	28185344	Side panel (L)
2	28185345	Side panel (R)
3	28140887	Cushion
4	29095539	Protection sheet
5	29095039-1	Protection sheet
6	29051732	Carton box
7	836440303	4STV+30CQ (BC) Screw
8	870086	4×12BS (BC) Washer
9	29100026	150×80 Poly bag
10	29341018-1	Instruction manual

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

SCHEMATIC DIAGRAM (CONTROL SECTION) 2/2



SCHEMATIC DIAGRAM (AUDIO SECTION) 1/2



ONKYO CORPORATION

TAPE MECHANISM-EXPLODED VIEW