

# ONKYO SERVICE MANUAL

## STEREO CASSETTE TAPE DECK MODEL TA-R260

### Black model

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

### SAFETY-RELATED COMPONENT WARNING!!

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

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

### SPECIFICATIONS

Track System:	4-tracks, 2-channels
Erasing System:	AC erase
Tape Speed:	4.8cm/sec (1-7/8 i.p.s.)
Wow and Flutter:	0.07% (WRMS)
Frequency Response:	20-15,000Hz (Normal) (30-14,000Hz $\pm$ 3dB) 20-16,000Hz (High) (30-15,000Hz $\pm$ 3dB) 20-17,000Hz (Metal) (30-15,000Hz $\pm$ 3dB)
S/N Ratio:	Dolby NR off: 58dB (metal position tape) 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:	Microphone jacks: 2 Input sensitivity: 0.6mV/600 ohms Input impedance: 2.7 kohms Line IN: 2 Input sensitivity: 50mV Input impedance: 50 kohms
Outputs:	Line OUT: 2 Standard output level: 500mV (0dB) Optimum load impedance: over 50kohms
Motors:	DC servo motor $\times$ 1; DC motor $\times$ 1
Heads:	REC/PB; Special Hard Permalloy $\times$ 1; Erase head: Ferrite $\times$ 1
Power Supply:	U.S.A. and Canadian models: AC 120V, 60Hz U.K. and Australian models: AC 240V, 50Hz Worldwide models: AC 120V and 220V switchable, 50/60Hz
Power Consumption:	23 watts

**ONKYO**  
AUDIO COMPONENTS

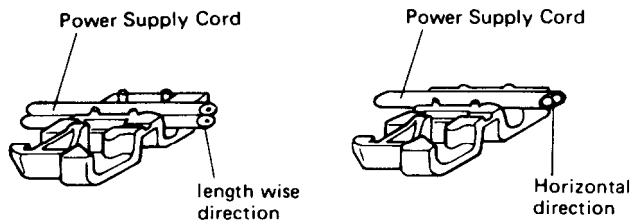
Dimensions: 435(W) × 112(H) × 282(D)mm  
 (17-1/8" × 4-3/8" × 10-3/8")  
 Weight: 4.2 kg. (9.3 lbs.)

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.



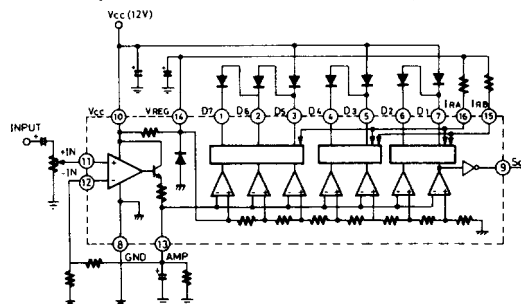
### 2. Instruction resistance measurement

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

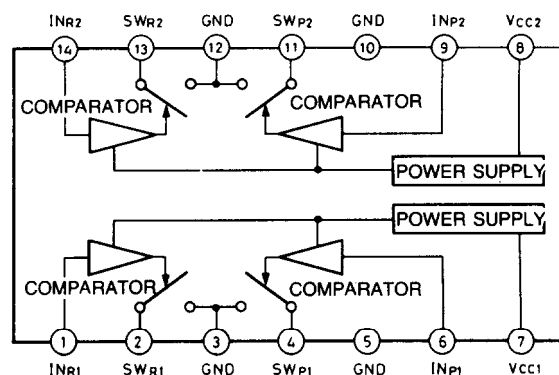
Specifications; 500V more than 10MΩ

## IC BLOCK DIAGRAM

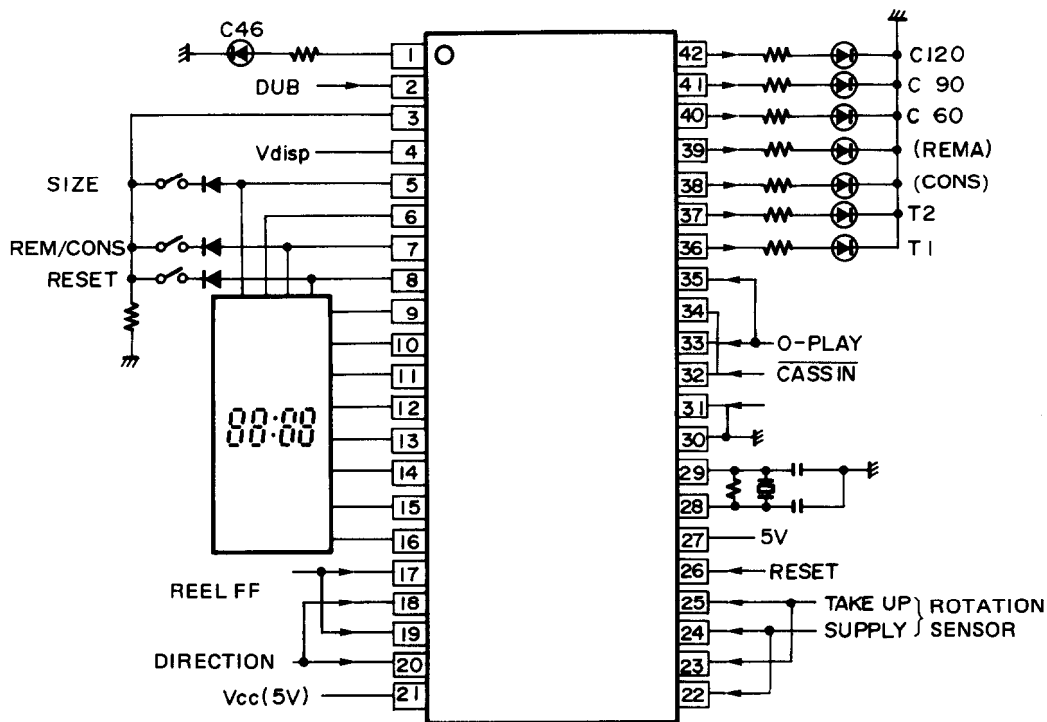
### IR2E02 (LEVEL METER DRIVE)



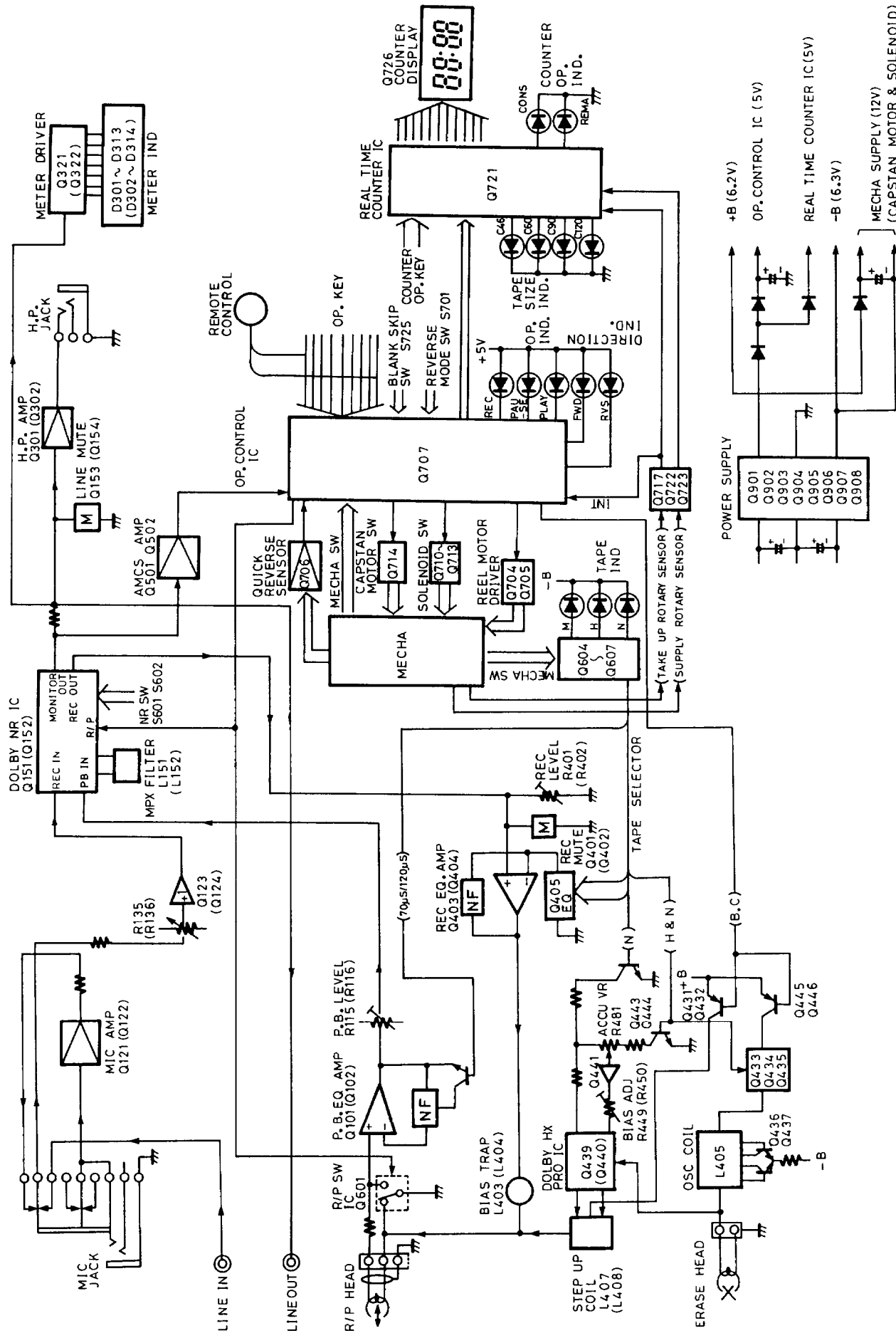
### μPC1290C



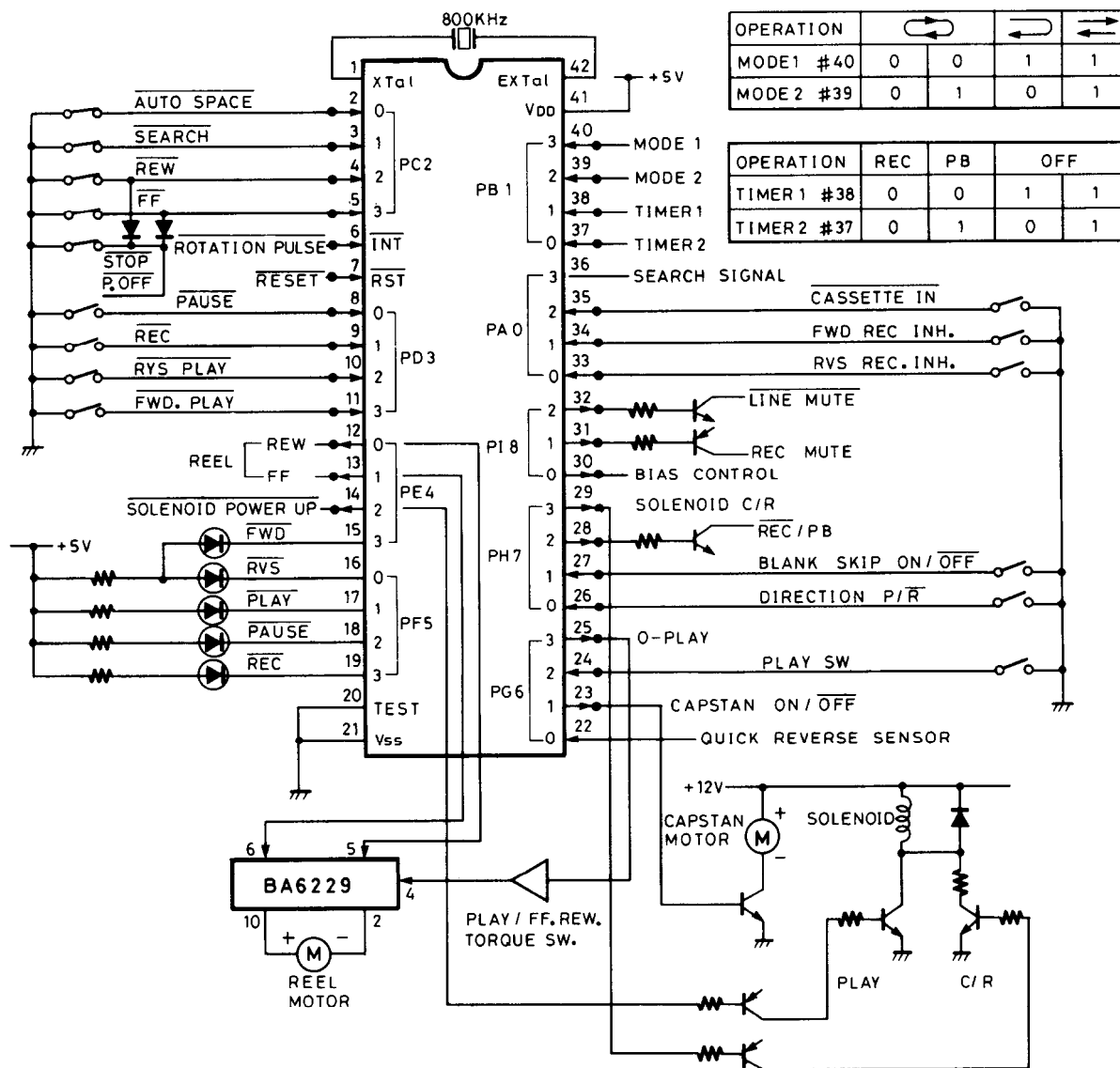
## HD64120S-A12 (COUNTER)



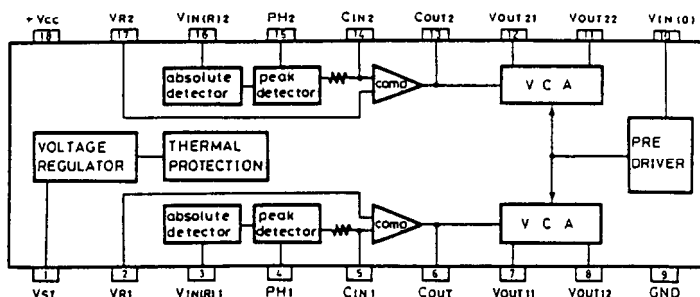
# BLOCK DIAGRAM



# MICRO COMPUTER (LM-6402H-1885)



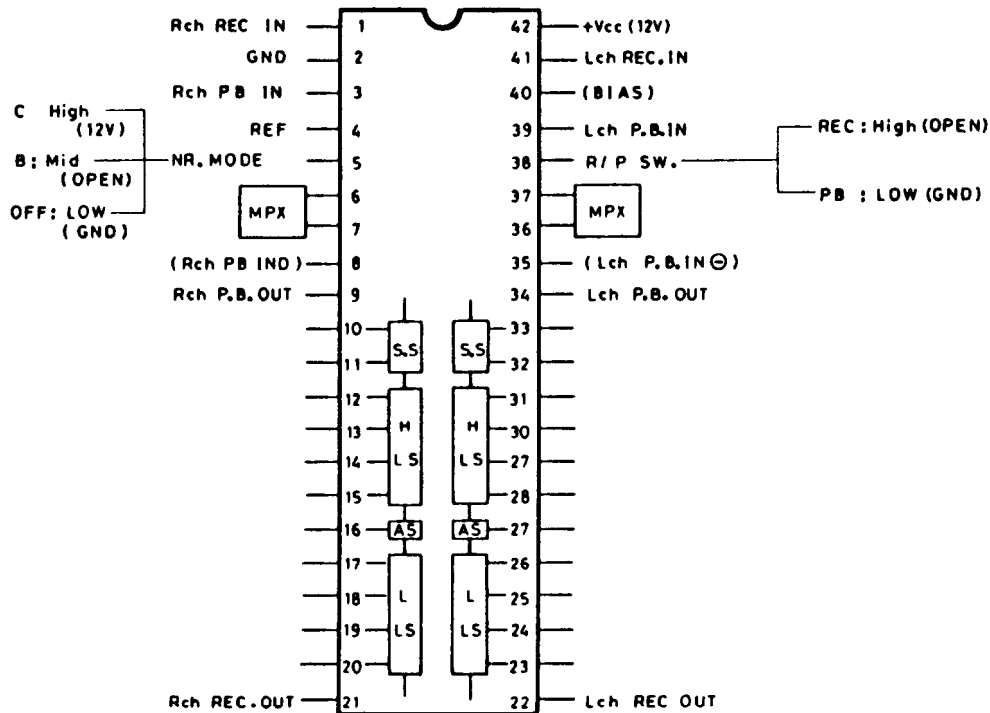
## μPC1297CA (DOLBY HX PRO SYSTEM)



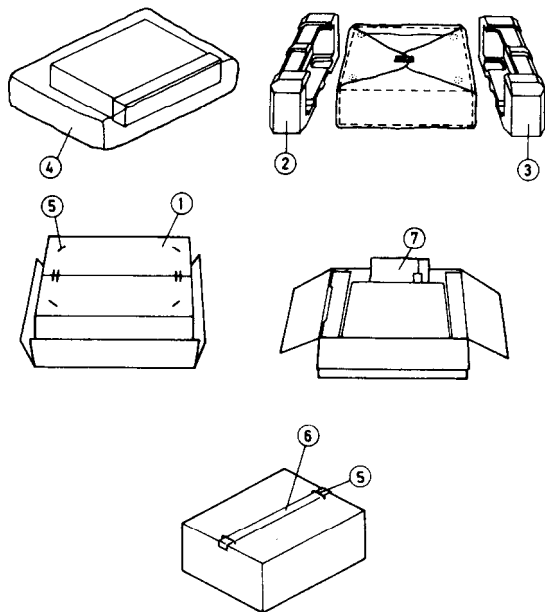
When the HX PRO is operation, by means of the recording signal coming from the recording head, a modulating oscillator voltage is applied to the absolute value detection circuit, and by means of the recording signal level peak detection value, the bias current is instantaneously controlled. At such time, by means of the CR integrated circuit, the frequency characteristic is maintained.

# IC BLOCK DIAGRAM

## HA12088NT (DOLBY NR IC 2CH in one package)



## PACKING VIEW



## PACKING PART LIST

### D Model

REF NO.	PART NO.	DESCRIPTION
1	29051467	Master carton box
2	29090987	Pad(L)
3	29090988	Pad(R)
4	29100037A	650×500 Poly bag
	29095012-1	500×800 protection sheet
5	282301	Sealing hook
6	260012	Damplon tape
7		Accessory bag ass'y
	29341117	Instruction manual
	2010095	Connection cable
	29365019	Waranty card (N)
	29358002E	Service station list (N)
	29100006A	350×250 Poly bag

### UW Model

REF NO.	PART NO.	DESCRIPTION
1	29051467	Master carton box
2	29090987	Pad(L)
3	29090988	Pad(R)
4	29100037A	650×500 Poly bag
	29095012-1	500×800 protection sheet
5	282301	Sealing hook
6	260012	Damplon tape
7		Accessory bag ass'y
	29341117	Instruction manual
	2010095	Connection cable
	25055018	Conversion plug (CV-K-1)
	29100006A	350×250 Poly bag

### NOTE

(N): Only U.S.A. Model

# ADJUSTMENT PROCEDURES

## PRECAUTIONS

- Before adjustment, clean the following parts with an alcohol moistend swab.
  - \* record/playback head
  - \* pinch roller
  - \* erase head
  - \* 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

Blank tapes (completely erased)

NORMAL . . . . . NEW UD90

HIGH . . . . . NEW XL-II90

METAL . . . . . NEW MX60

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 moter	3,010 to 3,020Hz	
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	See fig.1, fig.3
3	Playback level	AC voltmeter to terminals TP-1 and TP-2		MTT-150	PB	AC voltmeter	R-115 (Ch. L) R-116 (Ch. R)	300mV	
4	Bias frequency	Frequency counter to P401. E head read (loose coupling)		METAL TAPE	REC	Frequency counter	L-405	85kHz	
5	HX-PRO	AC voltmeter to terminals TP-3 and TP-4		METAL TAPE	REC	AC voltmeter	L-407 (Ch. L) L-408 (Ch. R)	Maximum	
6	Bias current	Fig. 2	1kHz, -20dB and 12kHz, -20dB	NEW XL-II90	REC/PB (FWD) (REV)	AC voltmeter	R-449 (Ch. L) R-450 (Ch. R)	Same level at REC/PB	Input VR maximum
7	Record level	Fig. 2	1kHz		REC PAUSE	AC voltmeter	Attenuator or AF OSC output	350mV	Input VR maximum
					REC/PB	AC voltmeter	R-401 (Ch. L) R-402 (Ch. R)	Same level at REC/PB	
8	Reverse operation sensitivity	DC voltmeter to sockets P709A #2 (NAAF-2937)		TDK AD-120 Magnetic substance	FWD PB	DC voltmeter	semi-fixed on the mechanism P.C.B.	-4.5V	

PLAY torque . . . . . 30 - 70g/cm  
FF.REW torque . . . . . 90 - 160g/cm  
Back tention . . . . . 2 - 6g/cm

## NOTE

ACCU VR . . . . . Center position  
DOLBY NR. . . . . OFF

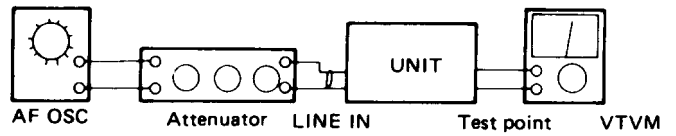
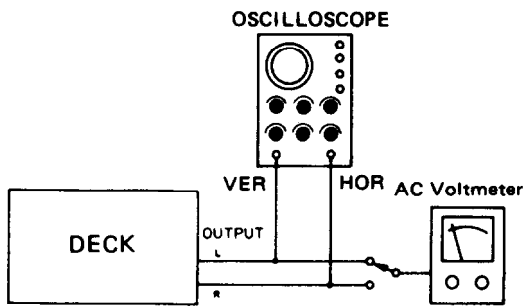
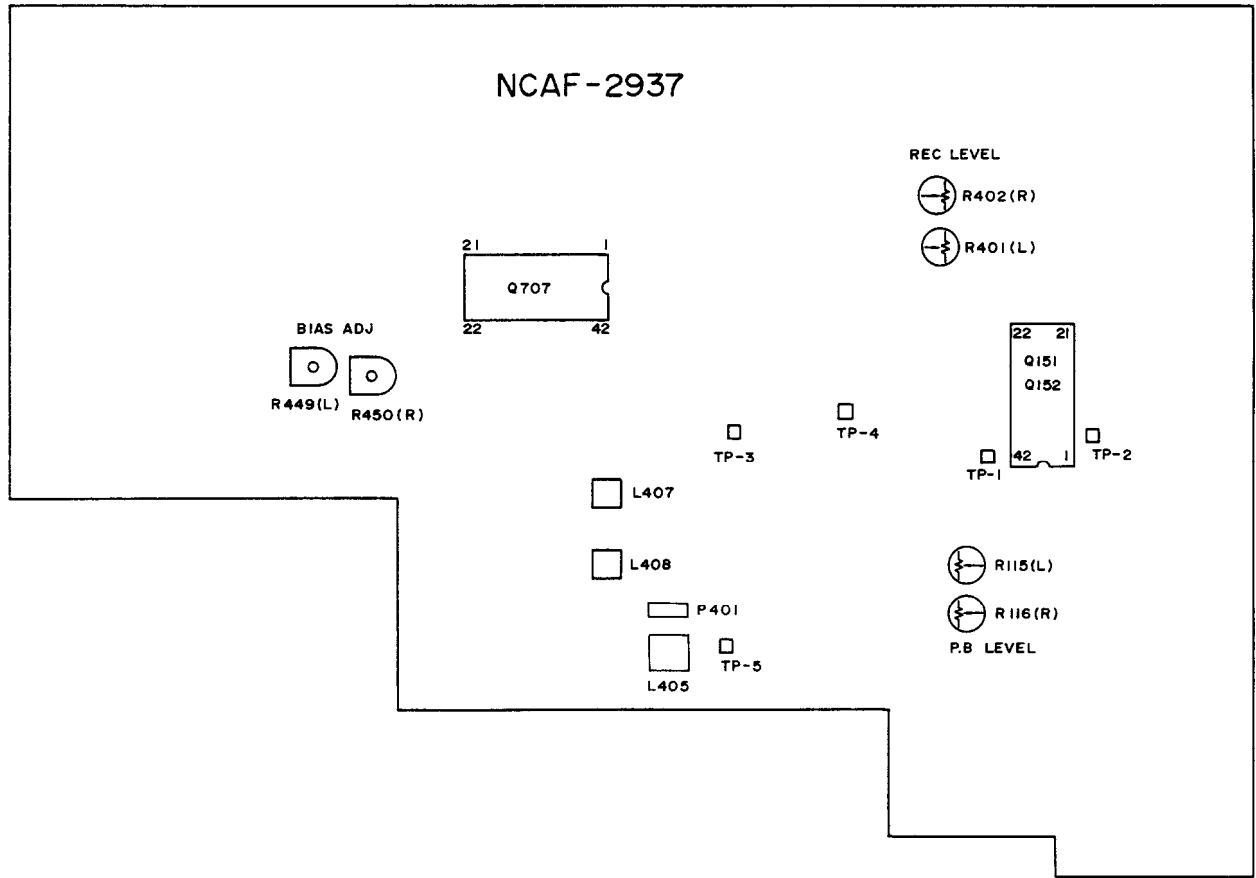
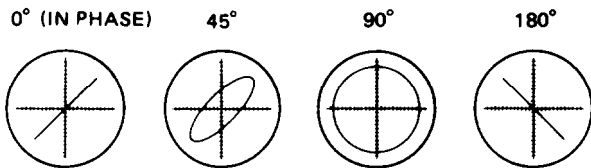


fig-2



Confirming phase relationship

fig-1

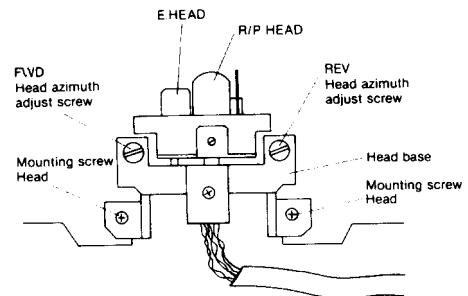


fig3

# METHOD FOR REMOVING BOTTOM BOARD

(refer to exploded view of chassis)

1. Remove top cover.
2. Remove front panel.
3. Remove the 2 mounting screws of the main PC board (NAAF-2937-1).
4. Remove the 1 fastening screw of the Power Switch PC board (NASW-2942-1).
6. Remove the holder from the PC board.
7. Remove the 4 fastening screws of the back panel and bottom board.
8. Remove the 3 fastening screws of the front bracket and bottom board.
9. Remove the ground terminal.
10. Remove the bottom board by taking from the lower direction.

## CHASSIS-EXPLODED VIEW PART LIST

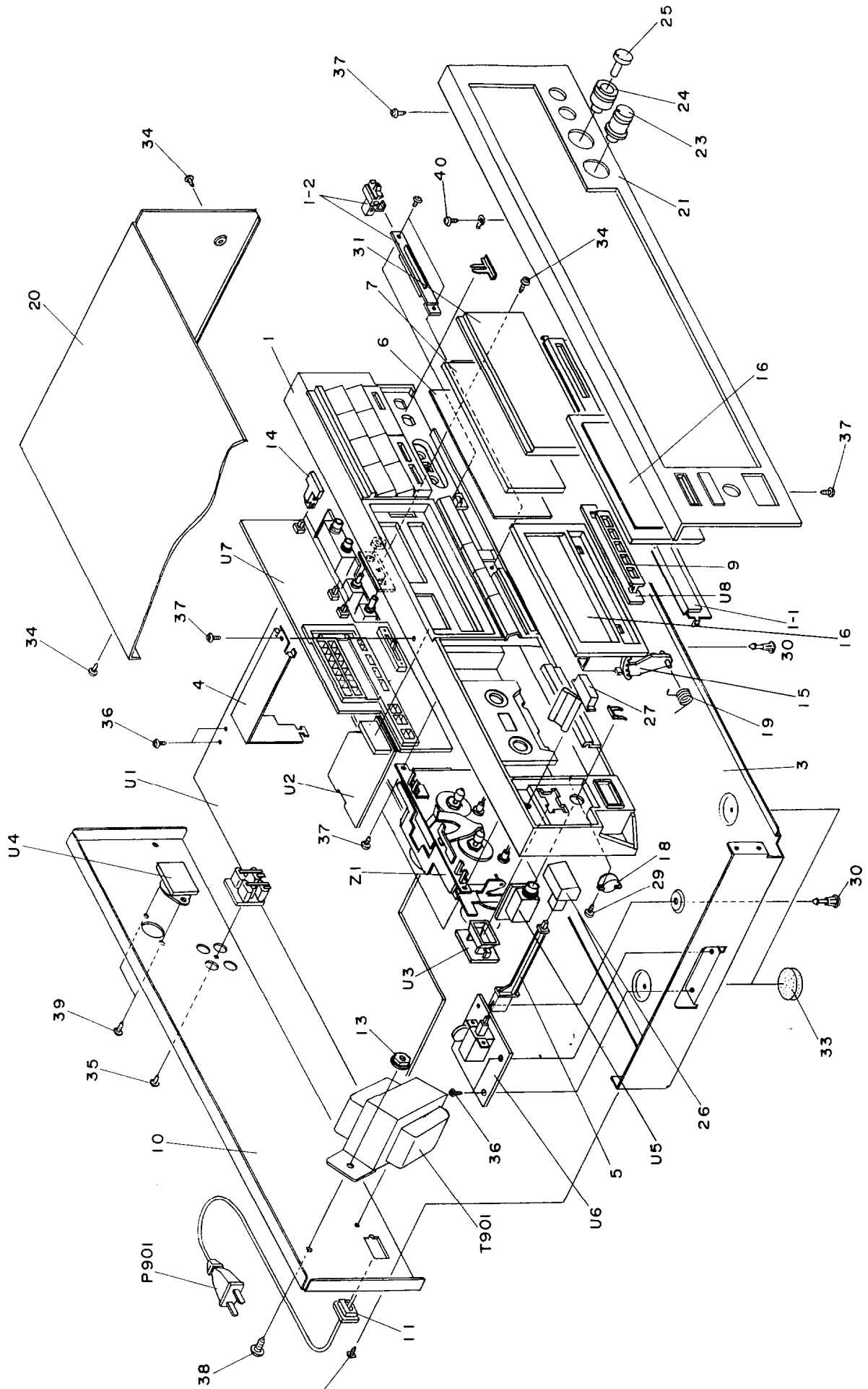
REF.NO.	PART NO.	DESCRIPTION			
1	27110343	FRONT BRACKET AS		253118	AS-SAA, POWER SUPPLY
1-1	28194266	DECORATION PLATE (M)			CORD (Q)
1-2	28322938	KNOB(SLIDE)AS	△ S101	25065123	NSS-1258P, VOLTAGE
3	27100122	BOTTOM BOARD			SELECTOR (W)
4	27141119	BRACKET (PC)	Z1	244103	NDM-95, TAPE MECHANISM
5	27273069A	JOINT (POW)			ASS'Y
6	28133178A	BACK PLATE	U1	1N011537-1	NAAF-2937-1, MAIN PC BOARD
7	28130244A	INDICATOR PLATE			ASS'Y
8	27190520	HOLDER	U2	1N011538-1	NADIS-2938-1, DISPLAY
9	27190521	HOLDER (L.E.D.-5)			PC BOARD ASS'Y
10	27120951	BACK PANEL (D)	U3	1N011539-1	NADIS-2939-1, HX PRO
	27120954	BACK PANEL (W)			INDICATOR PC BOARD ASS'Y
	27121025	BACK PANEL (Q)	U4	1N011540-1	NAAR-2940-1, REMOTE CONTROL
11	27300750	STRAINRELIEF			PC BOARD ASS'Y
13	86414010	FLANGE NUT FWN4X10FN	U5	1N011541-1	NAAR-2941-1, HEAD PHONE
14	28322940A	KNOB (SKIP)			TERMINAL PC BOARD ASS'Y
15	28400299C	CASSETTE LID	△ U6	1N011542-1	NASW-2942-1, POWER SWITCH
16	28400309A	WINDOW			PC BOARD ASS'Y
17	27180272	SPRING (CA)	U7	1N011543-1	NADIS-2943-1, OPERATION
18	28400282	DAMPER			DISPLAY PC BOARD ASS'Y
19	27180315	SPRING	U8	1N011544-1	NADIS-2944-1, DISPLAY PC
20	28184346-1	TOP COVER			BOARD ASS'Y
21	1N011121	FRONT PANEL			
23	28322944	KNOB (MODE)			
24	28322946	KNOB (BAL)			
25	28322948	KNOB (VOL)			
26	28322795	KNOB (POW)			
27	28322942	KNOB AS (EJ)			
29	833420108	TAP-TIGHT SCREW 2TTP+10BB			
30	27190524	HOLDER			
31	28191396	CLEAR PLATE			
33	27175028	LEG			
34	834430088	TAP-TIGHT SCREW 3TTS+8BBC			
35	834430108	TAP-TIGHT SCREW 3TTS+10BBC			
36	831130088	TAP-TIGHT SCREW 3TTW+8B			
37	833430080	TAP-TIGHT SCREW 3TTP+8PBC			
38	830440109	TAP-TIGHT SCREW 4TTC+10CBC			
39	82142604	PAN-HEAD SCREW 2.6P+4F BC			
40	834230108	TAP-TIGHT SCREW 3TTS+10BN			
△ T901	2300203	NPT-956D, POWER			
		TRANSFORMER (D)			
	2300204	NPT-956DG, POWER			
		TRANSFORMER (W)			
	2300241	NPT-956Q, POWER			
		TRANSFORMER (Q)			
△ P101	253099C	AS-UC-3, POWER SUPPLY			
		CORD (D)			
	253129A	AS-CEE, POWER SUPPLY			
		CORD (W)			

NOTE: (D): Only 120V model  
(W): Only Universal model  
(Q): Only 240V model

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



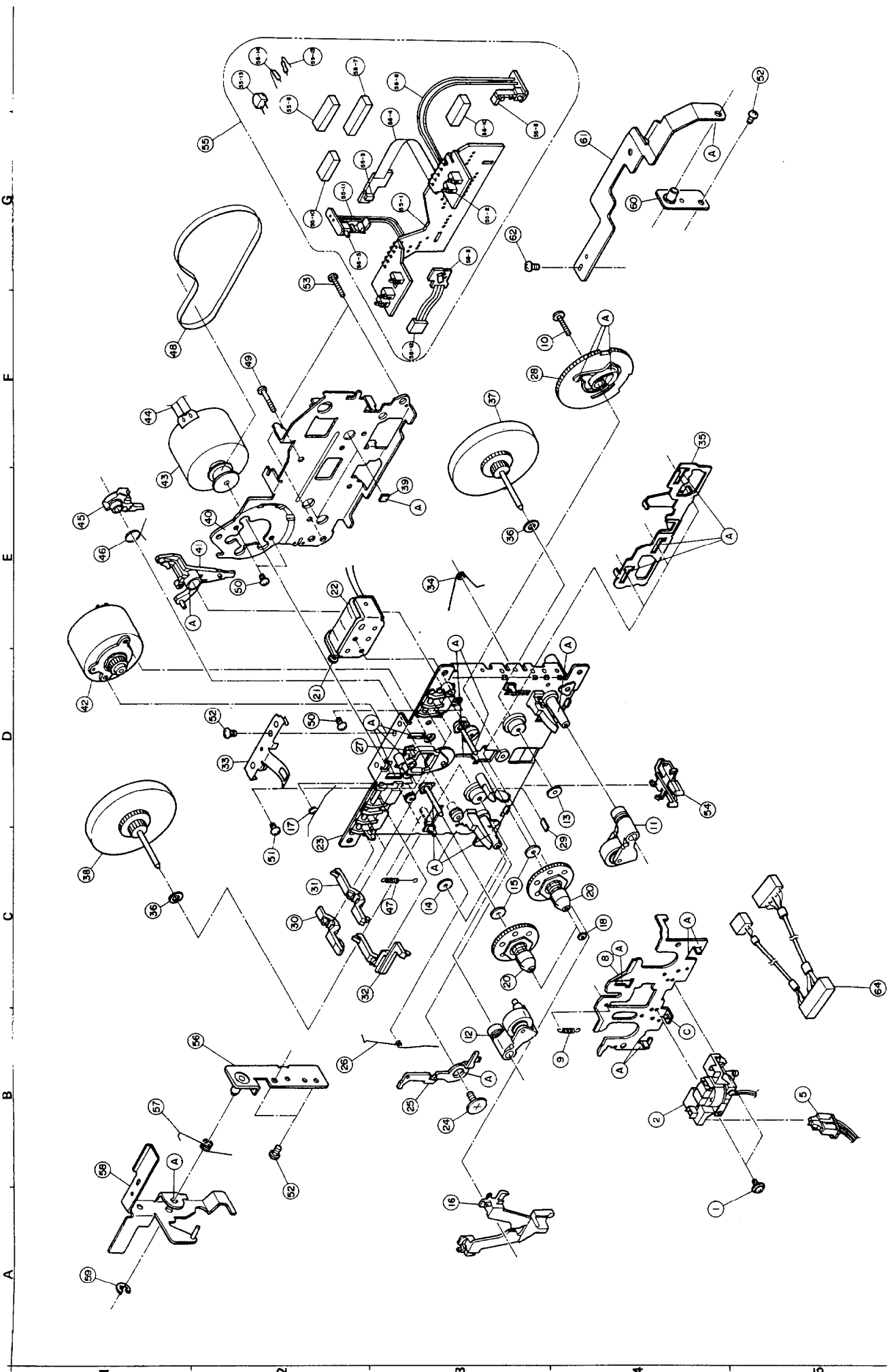
# CHASSIS-EXPLODED VIEW



## TAPE MECHANISM-PARTS LIST

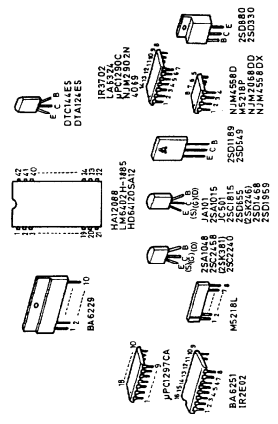
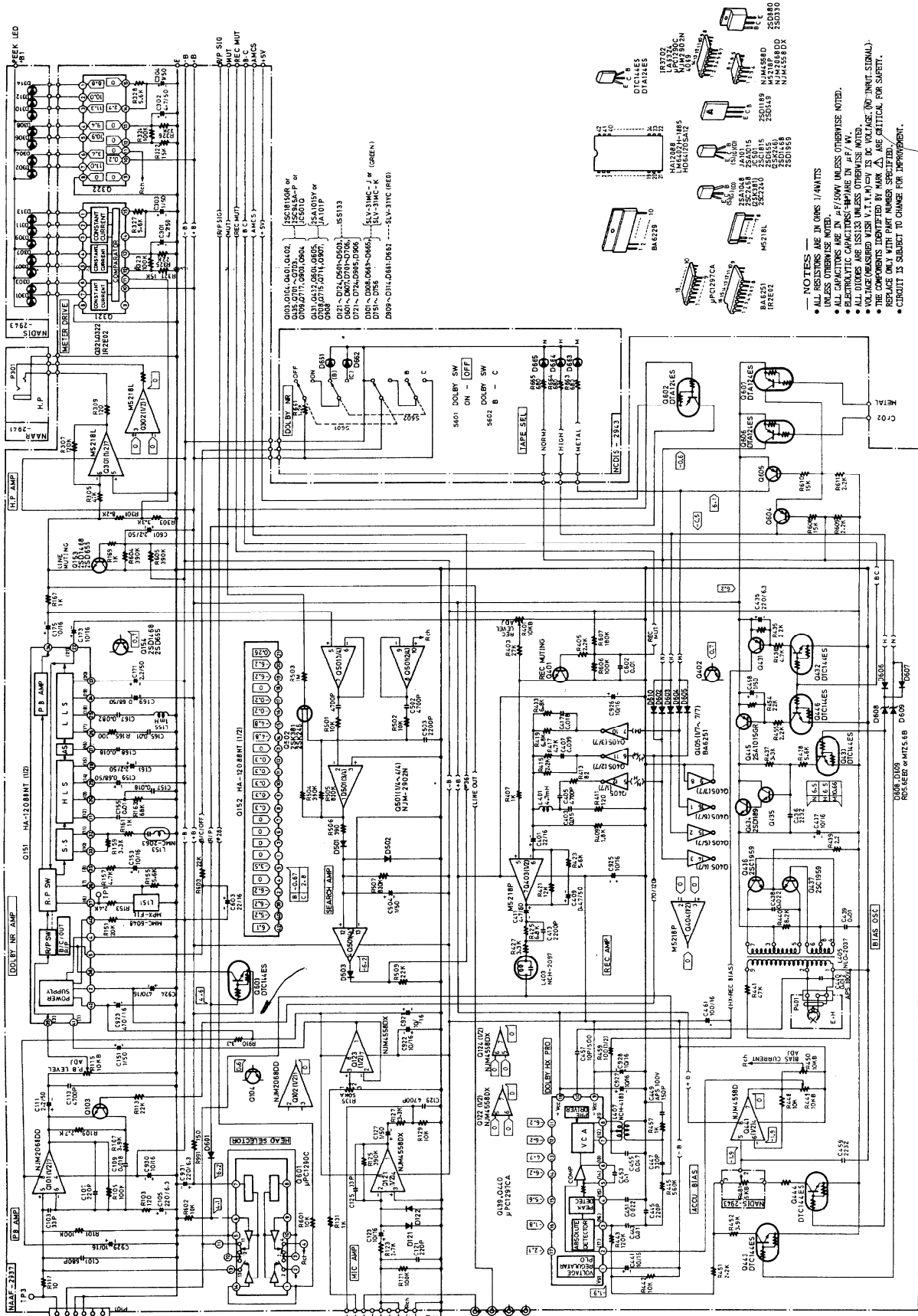
REF.NO	PART NO.	DESCRIPTION
1	801318	SCREW W/WASHER M2X5
2	24600069	HEAD AS
5	24611308	SENSOR AS
8	24611309	HEAD BASE T
9	24605584	SPRING (HEAD BASE)
10	801382	WAVE SCREW
11	24602414	PINCH ROLLER AS
12	24602421	PINCH ROLLER AS
13	24610926	OIL SEAL
14	24611188A	WASHER (OIL SEAL)
15	24611175	PLASTIC WASHER 2.1X7X25
16	24603326	LEVER (HOLD) C
17	24605587	SPRING (HOLD)
18	24611177	PLASTIC WASHER 1.7X3.2X.25
20	24602419	TAKE UP REEL AS
21	24606274	CORE (SOLENOID)
22	24606273	SOLENOID COIL
23	24611310	CHASSIS AS
24	24609006	SCREW
25	24607041	ARM (PROTECT) L
26	24605586	SPRING (L)
27	24602342A	IDLER AS
28	24602417A	CAM GEAR (E)
29	24611034	REFLECTOR
30	24603347	LEVER (PACK)
31	24603344	LEVER (REC)
32	24603346	LEVER (METAL)
33	24605588	SPRING
34	24605654	SPRING
35	24611311	SLIDE PLATE
36	24611041	PLASTIC WASHER 2.6X0.25
37	24602401	FLYWHEEL AS
38	24602400	FLYWHEEL AS
39	24604076A	SPACER
40	24607068	BRACKET (FW)
41	24607067	ARM (PLAY) F
42	24601227	REEL MOTOR AS
43	24601193	MOTOR AS
45	24607071	ARM (DIRECTION)
46	24605655	SPRING
47	24605590	SPRING
48	24602351	BELT (MAIN)
49	24611305	TAP-TIGHT SCREW
50	801355	SCREW/W M2.6X3.5
51	24611306	PAN HEAD SCREW 2.6X6ZN
52	24609007	PAN HEAD SCREW TT3X4.5
53	838126080	SCREW 2.6X8
54	24611181	HOLDER (LEAD)
55-1	24606269	BRACKET
55-2	24606271	PUSH SWITCH
55-5	24606270	LEAF SWITCH
56	24611183	BRACKET AS
57	24605592	SPRING (EJECT) L
58	24603331	LEVER (EJECT)
59	893030	E WASHER 3
60	24611190	BRACKET AS
61	24607070	ARM (EJECT) A
62	24609002	PAN HEAD SCREW SW2X4ZN

**TAPE MECHANISM-EXPLODED VIEW**



# SCHEMATIC DIAGRAM (AUDIO SECTION)

A B C D E F G

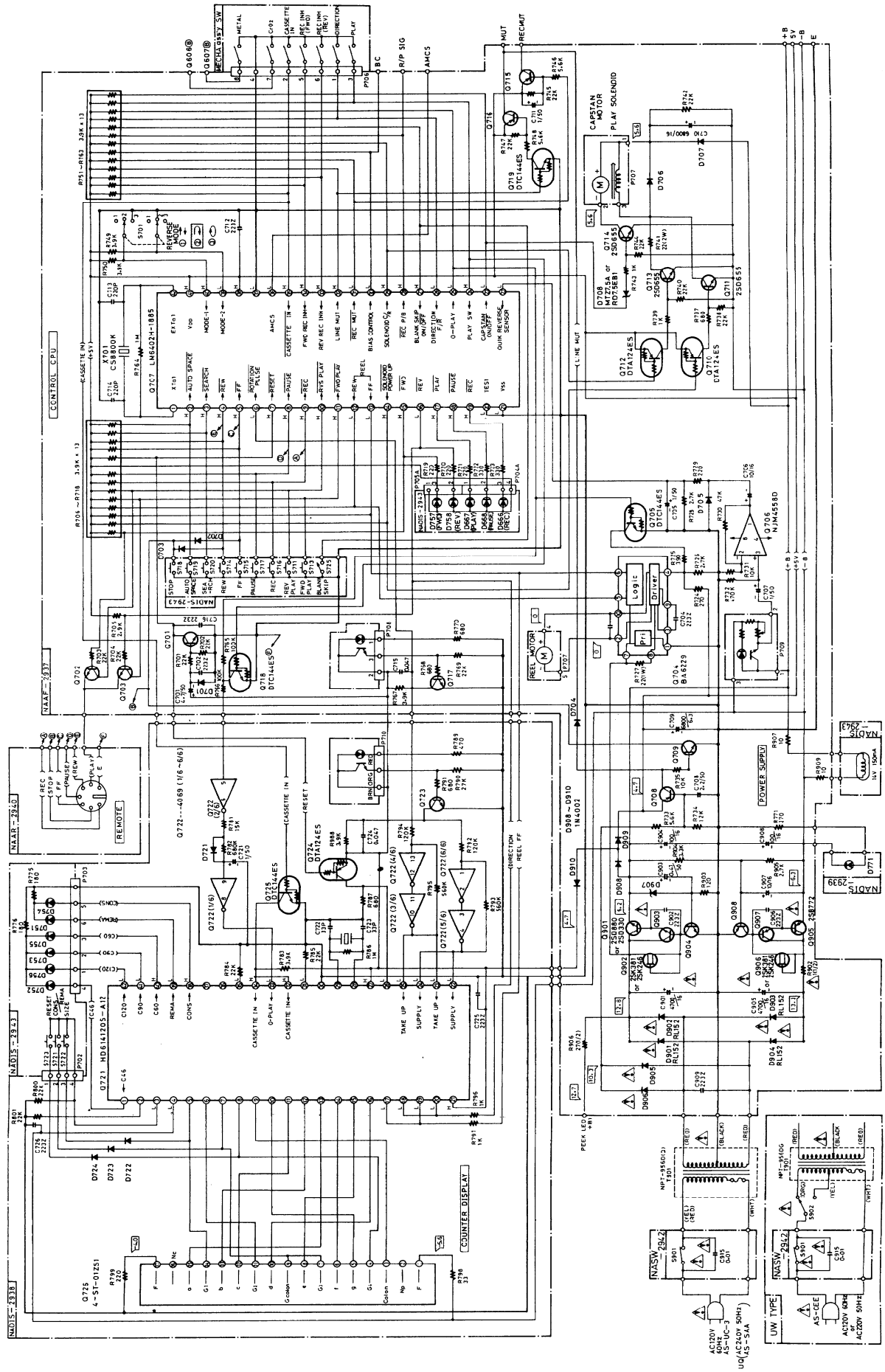


**NOTES**

- ALL RESISTORS ARE IN OHMS UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN P.F./50V UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS: COMPARE IN P.F./V.
- ALL DIODES ARE 1N4148 UNLESS OTHERWISE NOTED.
- VOLTAGE MEASURED WITH V.T.M. ONLY IN DC VOLTAGE (NO INTR. SIGNAL).
- THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY.
- COMPONENTS IDENTIFIED BY MARK □ ARE CRITICAL FOR SAFETY.
- CHECK TO BE SUBSTIT. TO CHANGE FOR ADJUSTMENT.

SCHEMATIC DIAGRAM (CONTROL SECTION)

A B C D E F G





C169, C170	354786899	0.68 $\mu$ F, 50V, Elect.
C171, C172	354780229	2.2 $\mu$ F, 50V, Elect.
C173-C176	354741009	10 $\mu$ F, 16V, Elect.
C301, C302	354780479	4.7 $\mu$ F, 50V, Elect.
C303, C304	354780109	1 $\mu$ F, 50V, Elect.
C401, C402	354742209	22 $\mu$ F, 16V, Elect.
C409, C410	354784799	0.47 $\mu$ F, 50V, Elect.
C411, C412	354780479	4.7 $\mu$ F, 50V, Elect.
C435	354722219	220 $\mu$ F, 16V, Elect.
C437	354741009	10 $\mu$ F, 16V, Elect.
C440	370131234S	0.12 $\mu$ F, 100V, APS.
C441	354741009	10 $\mu$ F, 16V, Elect.
C449, C450	370131514S	150PF, 100V, APS.
C458	354780109	1 $\mu$ F, 50V, Elect.
C461	354741019	100 $\mu$ F, 16V, Elect.
C504	354780109	1 $\mu$ F, 50V, Elect.
C601	354780229	2.2 $\mu$ F, 50V, Elect.
C603	354742209	22 $\mu$ F, 16V, Elect.
C701	354780479	4.7 $\mu$ F, 50V, Elect.
C705	354780109	1 $\mu$ F, 50V, Elect.
C706	354741009	10 $\mu$ F, 16V, Elect.
C707	354780109	1 $\mu$ F, 50V, Elect.
C708	354780229	2.2 $\mu$ F, 50V, Elect.
C709	354726829	6800 $\mu$ F, 6.3V, Elect.
C710	354746829	6800 $\mu$ F, 16V, Elect.
C901	354744729S	4700 $\mu$ F, 16V, Elect.
C903	354784799	0.47 $\mu$ F, 50V, Elect.
C904	354741019	100 $\mu$ F, 16V, Elect.
C905	354744729	4700 $\mu$ F, 16V, Elect.
C907	354741009	10 $\mu$ F, 16V, Elect.
C908	354741019	100 $\mu$ F, 16V, Elect.
C921, C922	354741009	10 $\mu$ F, 16V, Elect.
C923, C924	354744719	470 $\mu$ F, 16V, Elect.
C925-C930	354741009	10 $\mu$ F, 16V, Elect.
C931	354722219	220 $\mu$ F, 6.3V, Elect.

**Resistors**

R115, R116	5210064	N06HR10kBD, Semifixed
R135, R136	5104203	N09RGL50kA25M, VR
R401, R402	5210064	N06HR10kBD, Semifixed
R449, R450	5215045	N08HR10kBC, Semifixed
R459	44161014	100 $\Omega$ , 1/2W, Oxidefilm
R706-R718	49163392413	3.9k $\Omega$ ×13, 1/10W, Network
R727	441623204	22 $\Omega$ , 1W, Oxidefilm
R741	441722204	22 $\Omega$ , 2W, Oxidefilm
R751-R763	49163392413	3.9k $\Omega$ ×13, 1/10W, Network
⚠ R902	441520104	1 $\Omega$ , 1/2W, Oxidefilm
⚠ R906	441522704	27 $\Omega$ , 1/2W, Oxidefilm

**Terminals**

P601	25045217	NPJ-4PDBL95, Input/output
P121	25045195	HLJ-4338-01-3010, Mic.

**Switch**

S701	25030289	NRSF-123-25MP, MODE
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**Plug**

P101	25055103	NPLG-6P87
P401	25055100	NPLG-3P84
P704	25055184	NPLG-3P168
P705	25055184	NPLG-3P168

**Socket**

P706A	2000663	NSAS-16P619
P707A	2000662	NSAS-10P618
P708A	2000661	NSAS-6P617
P709A	2000616	NSAS-6P572
JL301, JK302	25050272	NSCT-8P-100
JL401	25050270	NSCT-6P-98
JL701	25050272	NSCT-8P-100

JL703, JL705	25050267	NSCT-3P-95
	<b>Miscellaneous</b>	
	27160151	RAD54, Radiator
	27160166	Radiator
	82143006	3P+6FNBC, Screw
	870039A	Washer
	27141121	Bracket(SW)

**NADIS-2938-1**

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>ics</b>	
Q721	222998	HD614120S-A12
Q722	222934 or 222840692	BU4069UB or 4069UBP
	<b>Transistors</b>	
Q723	2211255, 2210746 or 2212485	2SC1815GR, 2SC945 AP or JC501Q
Q724	2212600	DTA124ES
Q725	221282	DTC144ES
Q726	212036	4-ST-01ZS1, Display tube
	<b>Diodes</b>	
D721-D724	223163	1SS133
	<b>Ceramic OSC</b>	
X721	3010099	CSA-4.00MG
	<b>Capacitors</b>	
C721	354780109	1 $\mu$ F, 50V, Elect.
	<b>Plug</b>	
P702	25055184	NPLG-4P169
P703	25055187	NPLG-6P171
P710	25055133	NPLG-3P117

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

**NADIS-2939-1**

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>LED</b>	
D771	225228-J or 225228-K	SLV-31MC(J) or SLV-31MC(K)
	<b>Holder</b>	
	27190522	Holder(LED)

**NAAR-2941-1**

CIRCUIT NO.	PART NO.	DESCRIPTION
P301	25045187	HLJ0541-01-010 Head phone terminal

**NAAR-2940-1**

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Socket</b>	
P701	25050070	NSCT-7P20, Remocon.

**NASW-2942-1**

CIRCUIT NO.	PART NO.	DESCRIPTION
△ C915	3500065A	0.01μF, AC400V, IS
△ S901	25035559	NPS-111-L5219, Push
	25060092	NTM-1S33, Terminal

**NADIS-2943-1**

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>LEDS</b>	
D301-D308	225228-J or 225228-K	SLV-31MC(J) or SLV-31MC(K)
D309-D314	225227	SLV-31VC
D661, D662	225227	SLV-31VC
D663-D665,	225228-J or	SLV-31MC(J) or
D751-D756	225228-K	SLV-31MC(K)
	<b>Lamp</b>	
△ PL901	210090	14V, 150mA
	<b>Resistor</b>	
R481	6111002	N30LL1C-5KB5Z, Accu VR
	<b>Switch</b>	
S601, S602	25035523	NPS-122L485, Push
S711-S723	25035548	NPS-122S510, Push
S725	25035523	NPS-122L485, Push
	<b>Socket</b>	
P702A	2000665	NSAS-8P621
P703A	2000603	NSAS-12P559
	<b>Holder</b>	
	27190523A	Holder(LED-25)

**NADIS-2944-1**

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Diodes</b>	
D666	225190	GL1PR1
D667	225192	GLING1
D668	225190	GL1PR1
D757, D758	225192	GLING1
	<b>Socket</b>	
P704A	2000664	NSAS-6P620
P705A	2000489	NAAS-6P445

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