

ONKYO SERVICE MANUAL

STEREO CASSETTE TAPE DECK MODEL TA-RW505



Black and Silver model

UD, UD Ⓝ	120V AC, 60Hz
UP	230V AC, 50Hz
UW	120 or 220V AC, 50/60Hz
UQ	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.

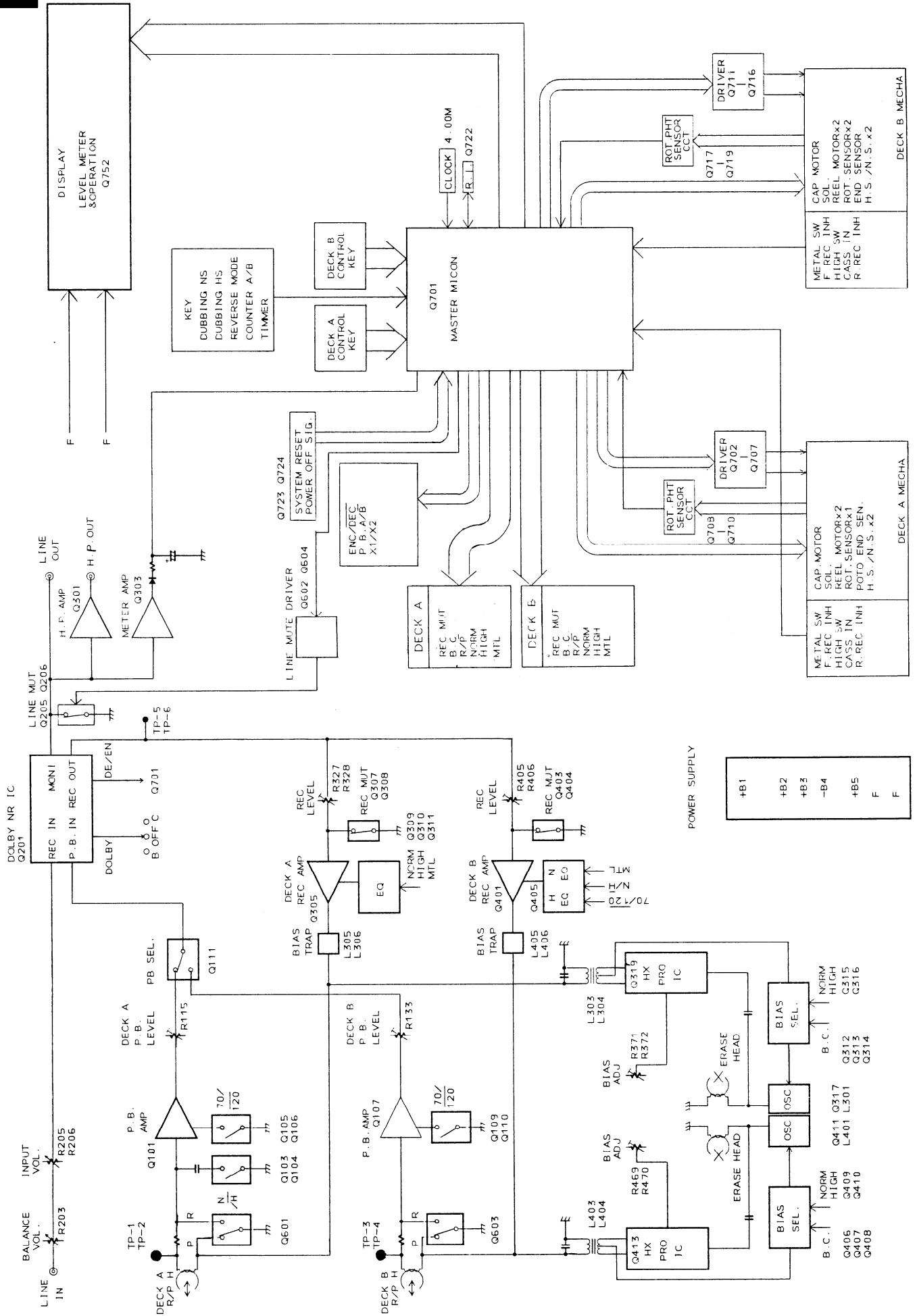
SPECIFICATIONS

Track System:	4-tracks, 2-channels
Erasing System:	AC erase
Tape Speed:	4.8cm/sec. (1-7/8 i.p.s.) 9.6cm/sec. (3-3/4 i.p.s.) (high speed dubbing)
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 – 16,000Hz \pm 3dB)
S/N Ratio:	Dolby NR off: 58dB (metal positoin 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:	Line IN: 2 Input sensitivity: 80mV Input impedance: 50 kohms
Outputs:	Headphone jack: 1 Optimum load impedance: 8 to 200 ohms Line OUT: 2 Standard output level: 500mV (0dB) Optimum load impedance: over 50 kohms
Motors:	DC servo motor \times 2; DC motor \times 2
Heads:	REC/PB head: 2; Erase head: 2
Power Supply:	<ul style="list-style-type: none"> ● European model : AC 230V, 50Hz ● U.S.A. and Canadiam models: AC 120V, 60Hz ● Worldwide models: AC 120 and 220V switchable, 50/60Hz
Power Consumption:	35 watts
Dimensions:	455(W) \times 120(H) \times 306(D)mm (17-15/16" \times 4-3/4" \times 12-1/6")
Weight:	5.7kg. (12.6 lbs.)

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

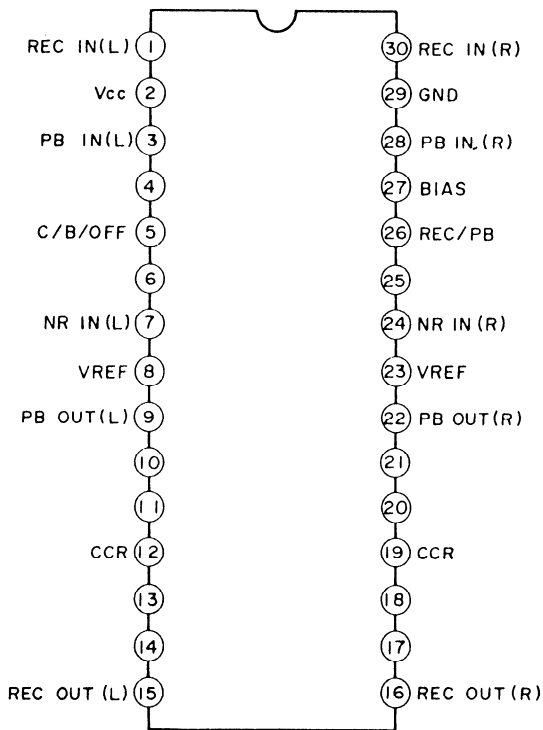
ONKYO
AUDIO COMPONENTS

BLOCK DIAGRAM

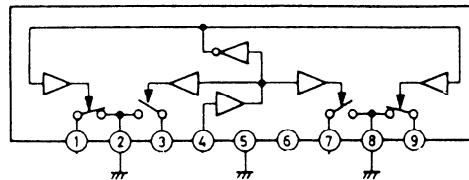


IC BLOCK DIAGRAM

HA12142NT (DOLBY NR)



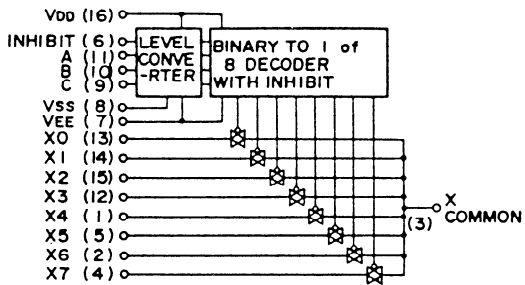
μPC 1330HA (REC/PB SW)



μPC1330HA

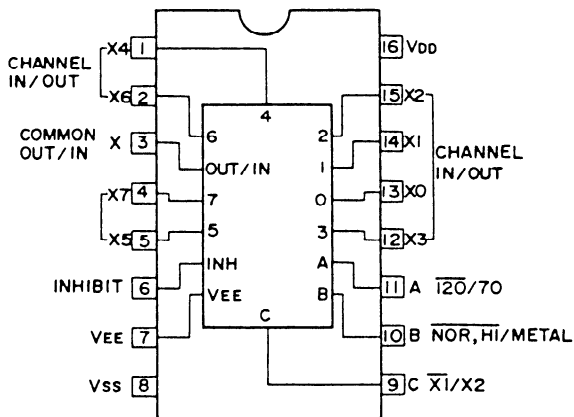
Pin No.	Function
1, 9	PB. signal
2	GND
3, 7	REC signal
4	REC/PB SW control
5	GND
6	+B
8	GND

4051B (ANALOG SW)



INHIBIT	A(11)	B(10)	C(9)	ON SWITCH
L	L	L	L	X0 (13)
L	H	L	L	X1 (14)
L	L	H	L	X2 (15)
L	H	H	L	X3 (12)
L	L	L	H	X4 (1)
L	H	L	H	X5 (5)
L	L	H	H	X6 (2)
L	H	H	H	X7 (4)
H	X	X	X	NONE

X: Don't Care

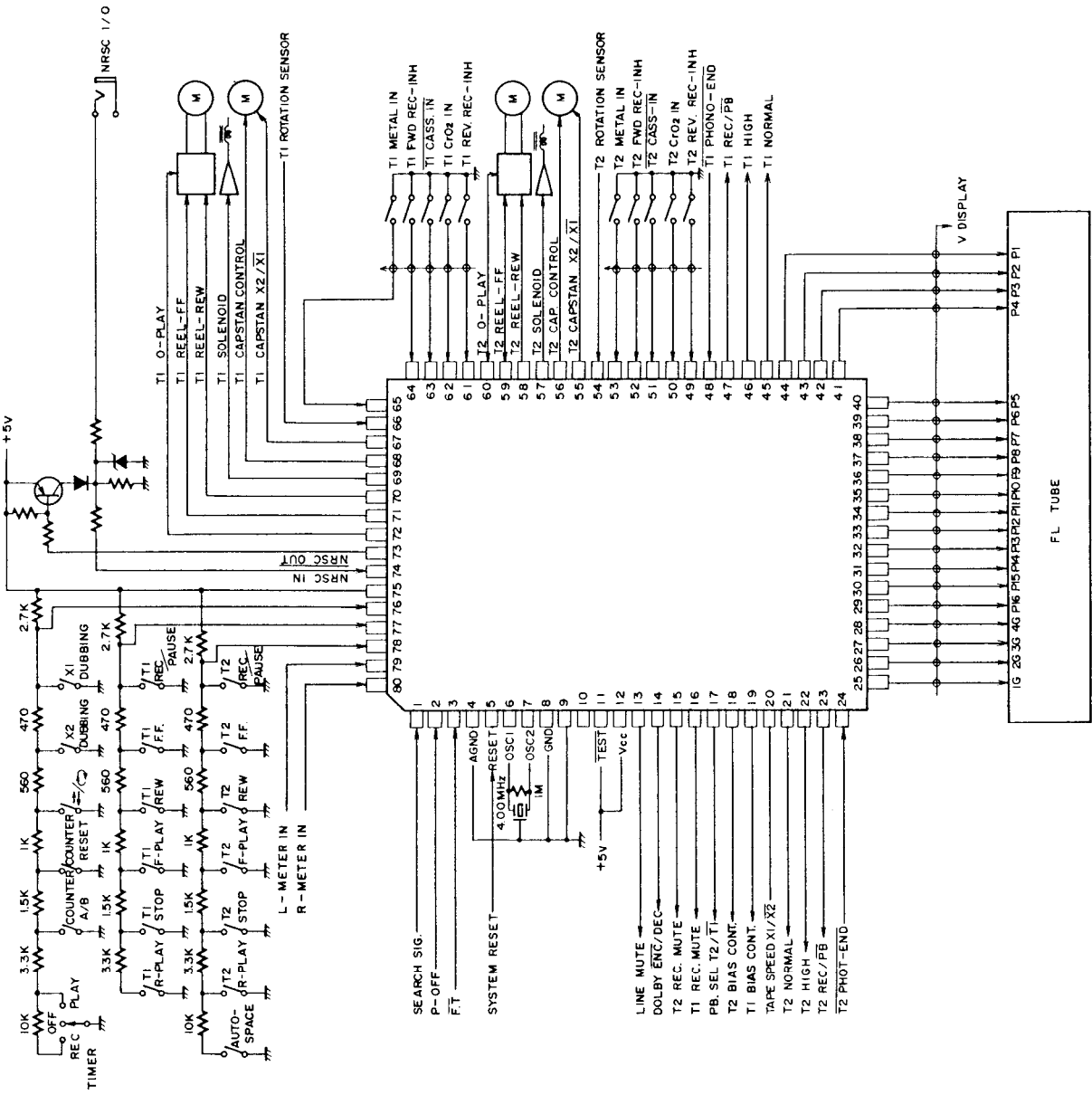


MICROCOMPUTER TERMINAL DESCRIPTION (HD404719A20FS)

Port No.	Name	IN/OUT	Function	Port No.	Name	IN/OUT	Function
1	SEARCH SIG.	IN	Search signal in put	57	T2 SOLENOID	OUT	Solenoid drive
2	P-OFF	IN	Power off detection	58	T2 REEL-REW	OUT	Reel motor rotation control: REW
3	\overline{FT}		Test terminal	59	T2 REEL-FF	OUT	Reel motor rotation control: FF
4	A GND		Analog grand	60	T2 O-PLAY	OUT	Reel motor rotation torque control
5	RESET	IN	System micon reset	61	T1 REV.REC-INH	IN	Recording prevention
6	OSC1		Clock oscillator	62	T1 HIGH IN	IN	High tape detection
7	OSC2		Clock oscillator	63	$\overline{T1}$ CASS-IN	IN	Tape lording detection
8	GND			64	T1 FWD.REC-INH	IN	Recording prevention
9			Not use	65	T1 METAL IN	IN	High tape detection
10			Not use	66	T1 ROTATION SEN.	IN	Reel rotation sensor
11	\overline{TEST}			67	T1 CAPSTAN X2/ $\overline{X1}$	IN	Capstan motor high/normal speed control
12	Vcc		+5V	68	T1 CAPSTAN CONT.	OUT	Capstan motor drvie control
13	LINE MUT	OUT	Lime muting, active high	69	T1 SOLENOID	OUT	Solenoid drive
14	DOLBY DEC/ \overline{END}	OUT	Dolby encord/decord selection	70	T1 REEL-REW	OUT	Reel motor rotation control: REW
15	T2 REC. MUTE	OUT	Recording muting, active high	71	T1 REEL-FF	OUT	Reel motor rotation control: FF
16	T1 REC. MUTE	OUT	Recording muting, active high	72	T1 O-PLAY	OUT	Reel motor rotation torque control
17	PB SEL T2/ $\overline{T1}$	OUT	Play back signal selection	73	\overline{NRSC} OUT	OUT	R1 cord out put
18	T2 BIAS CONTROL	OUT	Bias oscillator control	74	NRSC IN	IN	R1 cord in put
19	T1 BIAS CONTROL	OUT	Bias oscillator control	75	A Vcc		
20	TAPE SPEED X1/ $\overline{X2}$	OUT	Tape speed normal/high selection	76 ~ 78	OPERATION KEY IN	IN	Key in put
21	T2 NORMAL	OUT	Normal tape: H	79	L-METER IN	IN	Level meter signal
22	T2 HIGH	OUT	High tape: H	80	R-METER IN	IN	Level meter signal
23	T2 REC/ \overline{PB}	OUT	Recording/play back selection				
24	$\overline{T2}$ PH.END-SENSOR	IN	Tape end sensor				
25 ~ 28	1G ~ 4G	OUT	Display tube grid drive				
29 ~ 44	P1 ~ P16	OUT	Dispaly tube segement drive				
45	T1 NORMAL	OUT	Normal tape: H				
46	T1 HIGH	OUT	High tape: H				
47	T1 REC/ \overline{PB}	OUT	Recording/play back selection				
48	$\overline{T1}$ PH.END-SENSOR	IN	Tape end sensor				
49	T2 REV.REC-INH	IN	Recroding prevention				
50	T2 HIGH IN	IN	High tape detection				
51	$\overline{T2}$ CASS-IN	IN	Cassette tape lording detection				
52	T2 FWD.REC-INH	IN	Recording prevention				
53	T2 METAL IN	IN	Metal tape detection				
54	T2 ROTATION SEN.	IN	Reel rotation sensor				
55	T2 CAPSTAN X2/ $\overline{X1}$	OUT	Capstan motor speed control				
56	T2 CAPSTAN CONT.	OUT	Capstan motor drive control				

MICROCOMPUTER

HD404719A20FS



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:

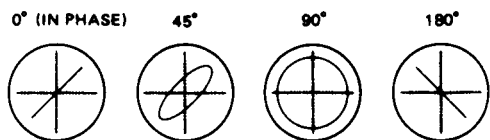
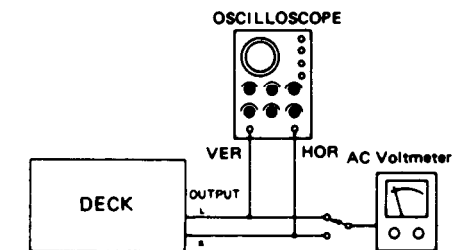
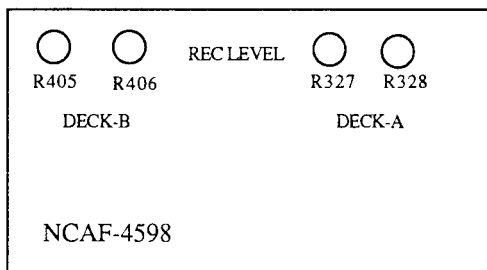
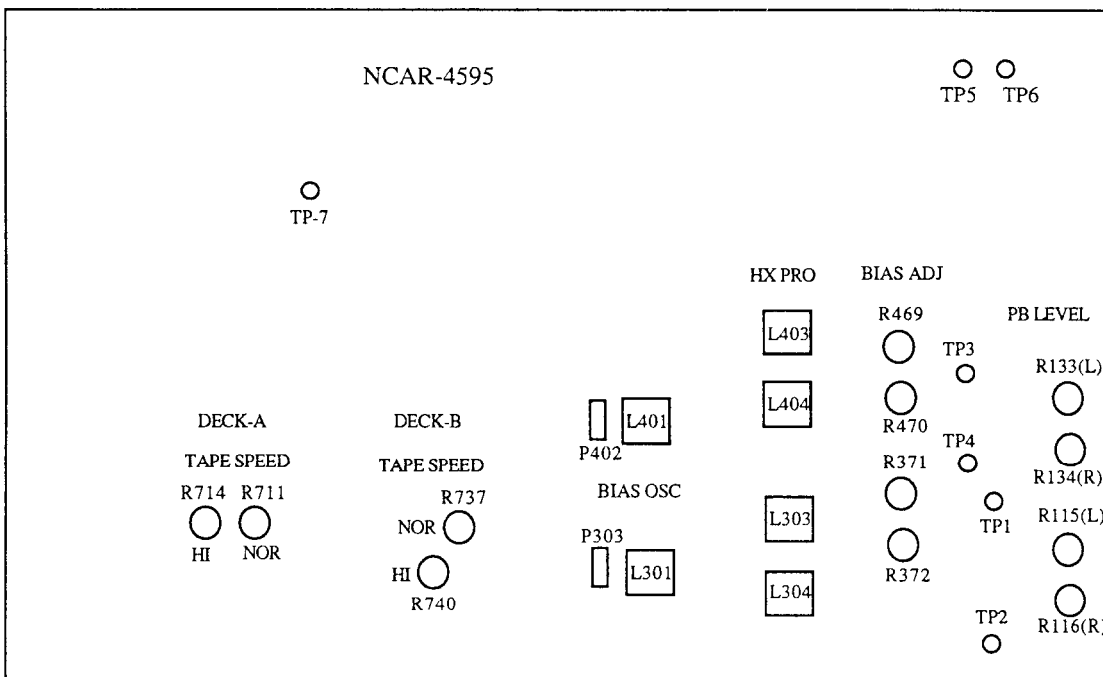
- Audio oscillator
- Digital frequency counter
- Oscilloscope
- Attenuator
- AC voltmeter
- Non-magnetic screw driver
- Test tapes
 - TCC-153 : 10 KHz, - 5dB
 - MTT-111 : 3 kHz, - 0dB
 - MTT-150 : Dolby level calibration
400Hz, tone 200nWb/m

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	DECK-A High R714 Normal R711 DECK-B High R740 Normal R737	6010±10Hz 3005±5Hz 6010±10Hz 3005±5Hz	High speed connect the TP-7 to GND. push the FWD button twice continuously. High speed first	
2	Head azimuth	AC voltmeter and oscilloscope to LINE output terminal	TCC-153	PB	AC voltmeter	Head azimuth screw	Maximum and same phase at channels L and R	fig-1	
3	Playback level	AC voltmeter to terminals TP5, TP6	MTT-150	PB	AC voltmeter	T1 R115(Ch.L) T1 R116(Ch.R) T2 R133(Ch.L) T2 R134(Ch.R)	300mV		
4	OSC Block	AC voltmeter to P303(T1) and P402(T2) E head read loose coupling	T1, T2 METAL TAPE XS-C60	T1, T2 REC	AC voltmeter	T1 L301 T2 L402	85kHz ±2kHz		
5	HX-PRO	AC voltmeter to TP1.TP2(T1) TP3.TP4(T2)	T1, T2 METAL TAPE XS-C60	T1, T2 REC	AC voltmeter	DECK-A L303.L304 DECK-B L403.L404	Maximum	R371.R372 R469.R470 Maximum	
6	Bias current	fig-2	1kHz -20dB and 12kHz, -20dB	XL-II C-90	REC/PB	AC voltmeter	T1 R371(Ch.L) T1 R372(Ch.R) T2 R469(Ch.L) T2 R470(Ch.R)	Same level at REC/PB	Input VR maximum.
7	Record level	fig-2	1kHz	XL-II C-90	REC	AC voltmeter	Attenuator or AF OSC output	350mV	
					REC/PB	AC voltmeter	T1 R327(Ch.L) T1 R328(Ch.R) T2 R405(Ch.L) T2 R406(Ch.R)	Same level at REC/PB	

Blank tape

NORAML	UD-1 C-90	PLAY torque	30 ~ 70g/cm
HIGH	XL-II C-90	FF. REW torque	90 ~ 180g/cm
METAL	XS C-60	Back tention	2 ~ 5g/cm

ADJUSTMENT POINT



Confirming phase relationship

fig-1

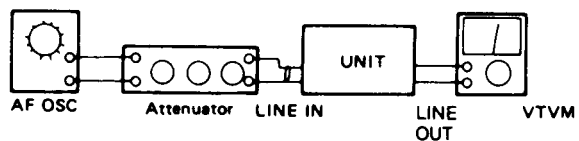
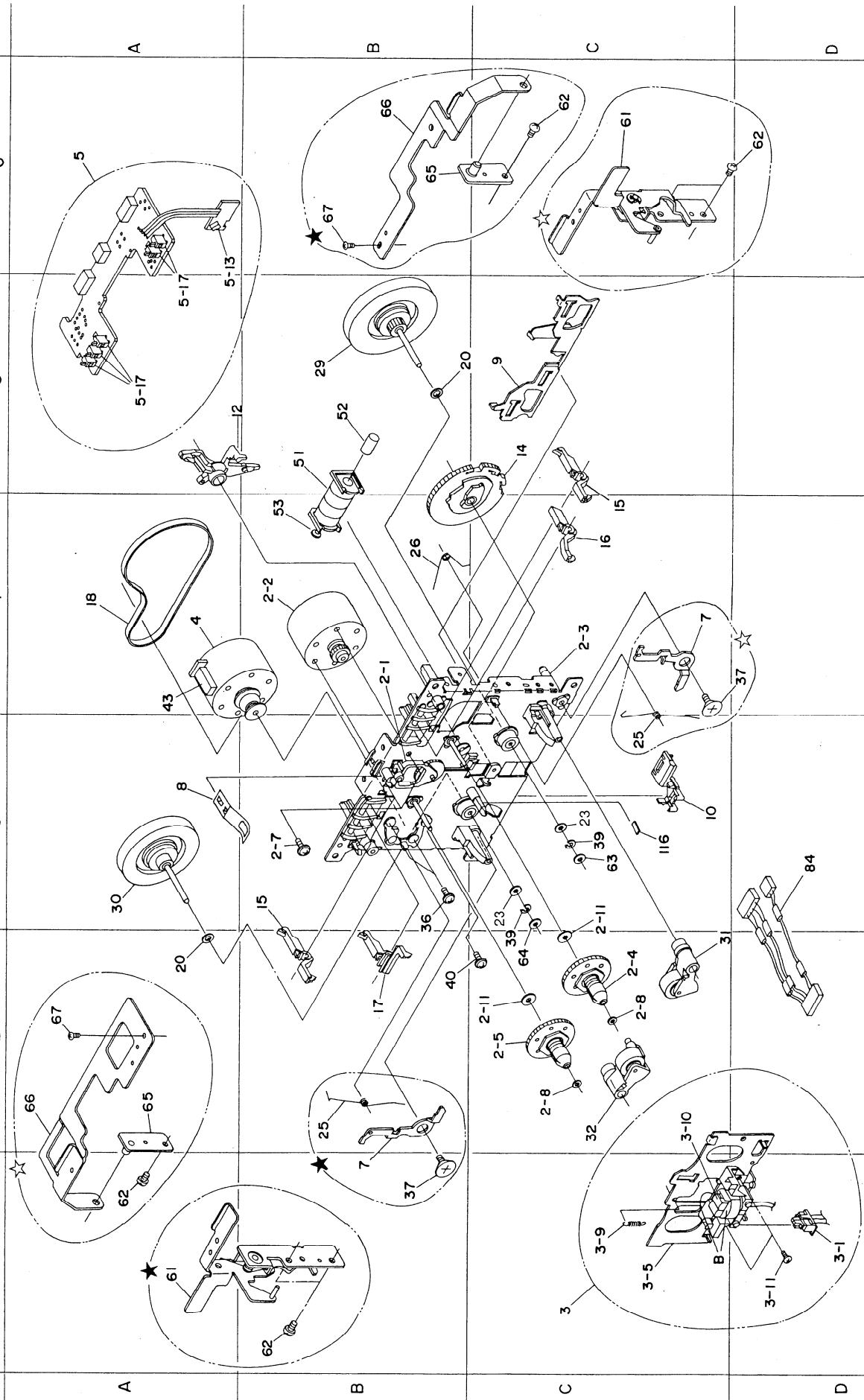


fig-2

TAPE MECHANISM PARTS LIST

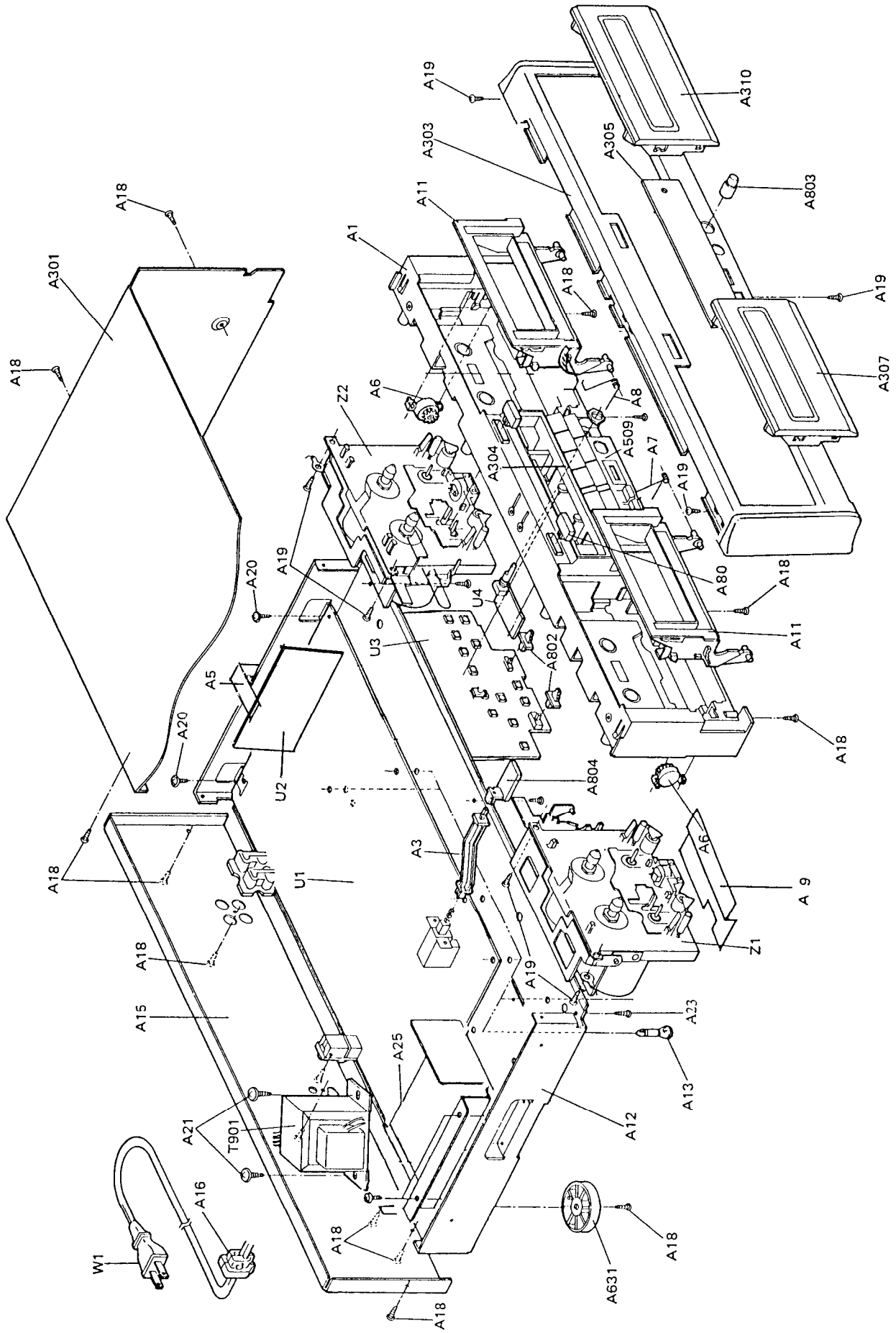
REF.NO.	ADDRESS	PARTS NO.	DESCRIPTION	REF.NO.	ADDRESS	PARTS NO.	DESCRIPTION
2-1	4B	24602482	IDLER AS	40	2B	838130080	WAVE SCREW 3 × 8
2-2	4B	24601245	REEL MOTOR	43	4A	24611488	CUSHION (HOLDER)
2-3	4C	24611382A	BASE AS (CHASSIS)	51	5B	24606333	SOLENOID COIL AS
2-4	2C	24602483	BASE AS (REEL)	52	5B	24606332A	CORE
2-5	2C	24602484	BASE AS (REEL)	53	4B	24606331	PLANGER
2-7	3B	24609032	PAN HEAD SCREW 2.6 × 6.4ZN	61	6C	24611429	PLATE HOLDER AS [DECK-A]
2-8	2C	24611177	PLASTIC WASHER 1.7 × 3.2 × .25		1A	24611447	PLATE HOLDER AS [DECK-B]
2-11	2C	24611175	PLASTIC WASHER 2.1 × .25	62	6D	833126049	TAP-TIGHT SCREW 2.6TTP+4C
3	1C	24600091	HEAD PLATE AS	63	3C	24611188A	WASHER (OIL SEAL)
3-1	1D	24606465	PHOTO REFLECTOR, SPI-320-B	64	2C	24610844	WASHER 1.9 × 5 × 0.25
3-5	1C	24611493	BASE (HEAD)	65	2A	24611557	HOLD PLATE AS [DECK-A]
3-9	1C	24605711	SPRING		6B	24611558	HOLD PLATE AS [DECK-B]
3-10	2C	24600110	R/P HEAD	66	2A	24607099A	EJECT ARM (A) [DECK-A]
3-11	1D	833120059	TAPPING SCREW 2 × 5ZN		6B	24607132	EJECT ARM [DECK-B]
4	4A	24601252	MAIN MOTOR AS	67	2A	82212004	FLAT HEAD SCREW 2S+4FN
5	6A	24606510	P.C.B. AS (CONTROL)		6B	24609066	PAN HEAD SCREW 2.0 × 4
5-13	6A	24606494	SG-107F3	84	3D	24606511	WIRE CONNECTOR [DECK-A]
5-17	6A	24606271	PUSH SWITCH		3D	24606512	WIRE CONNECTOR [DECK-B]
7	4C	24607041B	ARM (PROTECT) L [DECK-A]	116	3C	24611499	REFLECTER
	1B	24607065B	ARM (PROTECT) R [DECK-B]				
8	3A	24605739	SPRING				
9	5C	24611384A	SLIDE PLATE				
10	3C	24611385	LEAD HOLDER				
12	5A	24607116	ARM (PLAY)				
14	5C	24602550	CAM GEAR				
15	3B	24603365A	LEVER (REC)				
16	4C	24603366	LEVER (PACK) L				
17	2B	24603367	LEVER (METAL) L				
18	4A	24602551	MAIN BELT				
20	2A, 5B	24611041	PLASTIC WASHER 2.6 × 0.25				
23	3C	24610841	PLASTIC WASHER 2.6 × 4.7 × .5				
25	4C	24605790	SPRING L [DECK-A]				
	2B	24605791	SPRING R [DECK-B]				
26	4B	24605716	SPRING				
29	5B	24602487	FLYWHEEL AS				
30	3A	24602545	FLYWHEEL AS				
31	2C	24602414C	PINCH ROLLER AS (R)				
32	2C	24602421C	PINCH ROLLER AS				
36	3B	24609001	PAN HEAD SCREW SW2.6 × 5ZN				
37	1B	24609006A	SCREW				
39	3C	8930151	E WASHER 1.5S				

TAPE MECHANISM-EXPLODED VIEW



★ : DECK - B
☆ : DECK - A

CHASSIS-EXPLODED VIEW



CHASSIS-EXPLODED VIEW PART LIST

REF.NO.	PARTS NO.	DESCRIPTION	REF.NO.	PARTS NO.	DESCRIPTION
A1	27110741A	FRONT BRACKET AS [B]	P701	2041292510A	FLAT CABLE NCFC1-292510
	27110742A	FRONT BRACKET AS [S]	T901	2300857	NPT-1157D [D]
A3	27273135B	JOINT (POW)		2300858	NPT-1157P [P]
A5	27141571	BRACKET (P)		2300859	NPT-1157DG [W]
A6	28400282	DAMPER	S902	25065123	NSS-1258P [W]
A7	27180476A	SPRING (B)	W1	253146	AC CORD AS-UC6-#18 [D]
A8	27180477A	SPRING (A)		253148	AC CORD AS-CEE [P/W]
A9	27130646D	BRACKET (F)	U1	IN143595-1	NAAR-459S-1
A11	28400473-1A	FRAME AS (CASSETTE)	U2	IN143598-1	NAAF-4598-1
A12	27100233B	CHASSIS	U3	IN143597-1	NADIS-4597-1
A13	27190480	HOLDER	U4	IN143596-1	NAETC-4596-1
A15	27121651	REAR PANEL [D]	Z1	244172	CASSETTE DECK MECHANISM, NDM-162
	27121652	REAR PANEL [P]			
	27121654	REAR PANEL [W]	Z2	244173	CASSETTE DECK MECHANISM, NDM-163
	27121680	RWAR PANEL [PX]			
A16	27300750	BUSHING (CORD)			
A18	834430088	TAP-TIGHT SCREW 3TTS+8BBC			
A19	833430080	TAP-TIGHT SCREW 3TTP+8PBC			
A20	831130088	TAP-TIGHT SCREW 3TTW+8B			
A21	830440069	TAP-TIGHT SCREW 4 × 6			
A25	27130608E	BRACKET (PT)			
A301	28184479	TOP COVER			
	28140837	CUSHION 250 × 10 × .9t			
A303	IN143701K	FRONT PANEL [B]			
	IN144701K	FRONT PANEL [S]			
A304	27215240A	COSMETIC FRAME (F) [B]			
	27215241A	COSMETIC FRAME (F) [S]			
A305	28191641	CLEAR PLATE			
A307	27301635	CASSETTE LID AS (A) [B]			
	27301637	CASSETTE LID AS (A) [S]			
A310	28400623-1	CASSETTE LID AS (B) [B]			
	27301638	CASSETTE LID AS (B) [S]			
A509	27215236A	COSMETIC FRAME (P) [B]			
	27215237A	COSMETIC FRAME (P) [S]			
A631	27175254	LEG AS			
A801	28324232Y	KNOB (EJ) [B]			
	28324720Y	KNOB (EJ) [S]			
A802	28324714	KNOB (DOL) [B]			
	28324715	KNOB (DOL) [S]			
A803	28324338	KNOB (VOL) [B]			
	28324722	KNOB (VOL) [S]			
A804	28324234Y	KNOB (POW) [B]			
	28324721Y	KNOB (POW) [S]			

NOTE

- [B]: Black model
- [S]: Silver model
- [D]: 120V model
- [P]: 230V model
- [W]: World wide model
- [PX]: PX model

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

PRINTED CIRCUIT BOARD PARTS LIST

NAAR-4595-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION	CIRCUIT NO.	PARTS NO.	DESCRIPTION
	ICs				
Q101	222905	μ PC1228HA	Q715	2213570 or 221281	RN1207 or DTC114YS
Q107	222905	μ PC1228HA	Q716	2211945 or 2212304	2SK246-GR or 2SK381-D
Q111	222933 or 222840661TOS	BU-4066B or 4066B	Q717-Q719	2211255	2SC1815-GR
Q201	22240388	HA12142NT	Q721	2213285 or 2213284	2SC1740S-S or 2SC1740S-R
Q301	22240368	M5218AL	Q722	2212600 or 2213580	DTA124ES or RN2203
Q303	22240134	NJM-2904D	Q723	2213355 or 2213354	2SA933S-S or 2SA933S-R
Q319, Q413	222959	μ PC1297CA	Q724	2212600 or 2213580	DTA124ES or RN2203
Q501	222940	BA335H	Q903	2213285 or 2213284	2SC1740S-S or 2SC1740S-R
Q601, Q603	22240147	μ PC1330HA	Q904, Q905	2202115 or 2202116	2SD2061-E or 2SD2061-F
Q701	22240635	HD404719A20FS	Q906	2213355 or 2213354	2SA933S-S or 2SA933S-R
Q702, Q711	22240239	TA-7291S			
Q901	222780125JRC	78M12HF			
Q902	222780565JRC	78M56			
	Transistors				
Q103-Q106	221299	DTC114TS	D301, D302	223205	1SS270A
Q109-Q110	221299	DTC114TS	D601-D605	223205	1SS270A
Q113, Q114	221281 or 2213570	DTC114YS or RN1207	D701	22380029F	HER102
Q203	221281 or 2213570	DTC114YS or RN1207	D702	223205	1SS270A
Q205, Q206	2211706 or 2211705	2SD655-F or 2SD655-E	D703	224450433	MTZ4.3C
Q312	221281 or 2213570	DTC114YS or RN1207	D704	224450752	MTZ7.5B
Q313	2212855 or 2212853	2SB1068-U or 2SB1068-K	D705, D706	223205	1SS270A
Q314	2213170	2SD1809	D707	224450433	MTZ4.3C
Q315	221281 or 2213570	DTC114YS or RN1207	D708	224450752	MTZ7.5B
Q316	221281 or 2213570	DTC114YS or RN1207	D709-D711	223205	1SS270A
Q317	2211544 or 2211545	2SC1959-Y or 2SC1959-GR	D712	224450562	MTZ5.6B
Q406	221281 or 2213570	DTC114YS or RN1207	D713	224450683	MTZ6.8C
Q407	2212855 or 2212853	2SB1068-U or 2SB1068-K	D714, D715	223205	1SS270A
Q408	2213170	2SD1809	D901-D904	22380046	AM01Z
Q409	221281 or 2213570	DTC114YS or RN1207	D905, D906	223205	1SS270A
Q410	221281 or 2213570	DTC114YS or RN1207	D907	224451303	MTZ13C
Q411	2211544 or 2211545	2SC1959-Y or 2SC1959-GR	D908	223205	1SS270A
Q604	221281 or 2213570	DTC114YS or RN1207	D909	224451803	MTZ18C
Q605	2213355 or 2213354	2SA933S-S or 2SA933S-R	D910	224450562	MTZ5.6B
Q703	221281 or 2213570	DTC114YS or RN1207			
Q704, Q705	2211706 or 2211705	2SD655-F or 2SD655-E	Diodes		
Q706	221281 or 2213570	DTC114YS or RN1207	D301, D302	223205	1SS270A
Q707	2211945 or 2212304	2SK246-GR or 2SK381-D	D601-D605	223205	1SS270A
Q708-Q710	2211255	2SC1815-GR	D701	22380029F	HER102
Q712	221281 or 2213570	DTC114YS or RN1207	D702	223205	1SS270A
Q713, Q714	2211706 or 2211705	2SD655-F or 2SD655-E	D703	224450433	MTZ4.3C
			D704	224450752	MTZ7.5B
			D705, D706	223205	1SS270A
			D707	224450433	MTZ4.3C
			D708	224450752	MTZ7.5B
			D709-D711	223205	1SS270A
			D712	224450562	MTZ5.6B
			D713	224450683	MTZ6.8C
			D714, D715	223205	1SS270A
			D901-D904	22380046	AM01Z
			D905, D906	223205	1SS270A
			D907	224451303	MTZ13C
			D908	223205	1SS270A
			D909	224451803	MTZ18C
			D910	224450562	MTZ5.6B
			Coils		
			L201, L202	233407	NMC-6079
			L301	231210	NLO-2055
			L303, L304	231127	NCH-4183
			L305, L306	231165	NTR-6506
			L401	231210	NLO-2055
			L403, L404	231127	NCH-4183
			L405, L406	231165	NTR-6506
			X701	3010150	CST4.00MGW
			Capacitors		
			C105, C106	391980227	2.2 μ F50V, ELECT.
			C109, C110	391941017	100 μ F16V, ELECT.
			C113, C114	391980227	2.2 μ F50V, ELECT.
			C119, C120	391980227	2.2 μ F50V, ELECT.
			C123, C124	391941017	100 μ F16V, ELECT.
			C127, C128	391980227	2.2 μ F50V, ELECT.
			C133-C136	391980227	2.2 μ F50V, ELECT.
			C137	391980107	1 μ F50V, ELECT.
			C201, C202	391980227	2.2 μ F50V, ELECT.
			C205	391980227	2.2 μ F50V, ELECT.
			C206	391942207	22 μ F16V, ELECT.
			C207, C208	391941007	10 μ F16V, ELECT.
			C219, C220	391941017	100 μ F16V, ELECT.

CIRCUIT NO.	PARTS NO.	DESCRIPTION	CIRCUIT NO.	PARTS NO.	DESCRIPTION
C221	391980107	1 μ F50V, ELECT.	R903, R904	452530224F	RNU1/2WCJ2.2 Ω
C301-C304	391980477	4.7 μ F50V, ELECT.	R905	442530104F	RNU1/2WCJ1 Ω
C305, C306	391941007	10 μ F16V, ELECT.	R907	442524714F	RS1/2WBJ 470 Ω
C307, C308	391980107	1 μ F50V, ELECT.			
C319	391921017	100 μ F6.3V, ELECT.			
C324	391942217	220 μ F16V, ELECT.	S901	25035636	NPS-111-L590P
C326	370131534	0.015 μ F100V, APS			
C328, C329	391941007	10 μ F16V, ELECT.			
C341, C342	370131214	120PF100V, APS			
C345	391944707	47 μ F16V, ELECT.			
C411	391921017	100 μ F6.3V, ELECT.			
C416	391942217	220 μ F16V, ELECT.			
C418	370131534	0.015 μ F100V, APS			
C420, C421	391941007	10 μ F16V, ELECT.			
C433, C434	370131214	120PF100V, APS	P101, P102	25055136	NPLG-6P120
C437	391942207	22 μ F16V, ELECT.	P201	25045338	NPJ-4PDBL189
C438	391980107	1 μ F50V, ELECT.	P301	25055105	NPLG-8P89
C501	391980227	2.2 μ F50V, ELECT.	P303	25055132	NPLG-2P116
C503	391981097	0.1 μ F50V, ELECT.	P401	25055106	NPLG-9P90
C504	391984797	0.47 μ F50V, ELECT.	P402	25055132	NPLG-2P116
C601	391980477	4.7 μ F50V, ELECT.	P701A	25050861	NSCT-29P656
C602	391980107	1 μ F50V, ELECT.	P702A	2000991	NSAS-14P943
C701	3000064	0.47F, 5.5V	P703A	2002391210	NSAS-12P0235
C704	391941017	100 μ F16V, ELECT.	P704A	2002320810	NSAS-8P0025
C708	391921017	100 μ F6.3V, ELECT.	P705A	2000991	NSAS-14P943
C709	391980477	4.7 μ F50V, ELECT.	P706A	2002391210	NSAS-12P0235
C710	391941017	100 μ F16V, ELECT.	P707A	2002320810	NSAS-8P0025
C714	391921017	100 μ F6.3V, ELECT.	P708	25045330	NPJ-2PDBL184
C715	391980477	4.7 μ F50V, ELECT.			
C716	391980227	2.2 μ F50V, ELECT.			
C720, C721	391980107	1 μ F50V, ELECT.			
C722	393442217S	220 μ F, 16V, TM			
C901	3500065A	0.01 μ F AC400V, IS.			
C904	391944717	470 μ F16V, ELECT.			
C908	391942217	220 μ F16V, ELECT.			
C910, C911	391941017	100 μ F16V, ELECT.			
C913	391941017	100 μ F16V, ELECT.			
C915	391961017	100 μ F35V, ELECT.			
C916, C917	391980477	4.7 μ F50V, ELECT.			
C918	391962207	22 μ F35V, ELECT.			
C919	391941007	10 μ F16V, ELECT.			
C920	391942217	220 μ F16V, ELECT.			
C921	391942217	220 μ F16V, ELECT.			
C922	391942217	220 μ F16V, ELECT.			
C923	391941017	100 μ F16V, ELECT.			
C924	391941007	10 μ F16V, ELECT.			
C925, C926	391944707	47 μ F16V, ELECT.			
C927	393141027S	1000 μ F16V, FM			
C928	391941007	10 μ F16V, ELECT.			
	Resistors				
R115, R116	5210218	N06HR20KBD			
R133, R134	5210218	N06HR20KBD			
R371, R372	5210217	N06HR10KBD			
R469, R470	5210217	N06HR10KBD			
R704	442524704F	RS1/2WBJ 47 Ω			
R711	5210218	N06HR20KBD			
R714	5210217	N06HR10KBD			
R730	442524704F	RS1/2WBJ 47 Ω			
R737	5210218	N06HR20KBD			
R740	5210217	N06HR10KBD			
R762, R763	49163104415	RM1/10IJ100K~15			
R763	49163104405	RM1/10IJ100K~5			
R901	441723904F	RS2WBJ39 Ω			

PRINTED CIRCUIT BOARD-PARTS LIST

NAETC-4596-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Resistors		
R203	5104213	N09RLC250KW15F
R205, R206	5104214	N092L50KA15F
Jack		
P304	25045139	HLJ0540-01-010

NADIS-4597-1

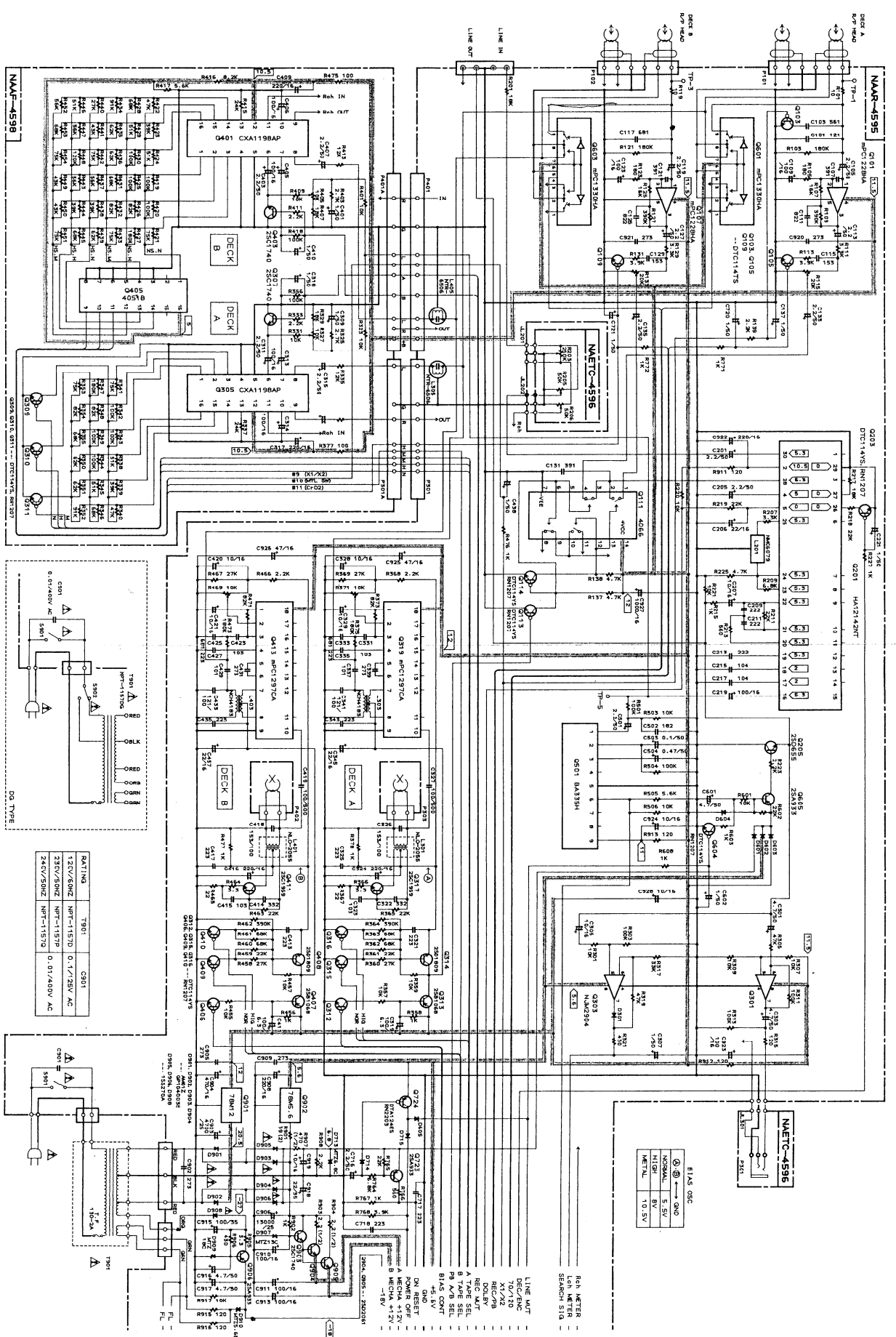
CIRCUIT NO.	PARTS NO.	DESCRIPTION
Fluorescent tube		
Q801	212117	BJ098GNK
Switch		
S801-S818	25035548	NPS-111-S510
S819	25065297	NSS-23119
S201	25065297	NSS-23119
Socket		
P701	25050893	NSCT-29P688
Holder		
	27190754A	HOLDER FL

NAAF-4598-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
IC		
Q305, Q401	22240267	CXA1198AP
Q405	222840511	4051B
Transistors		
Q307, Q308	2213285 or 2213284	2SC1740S-S or 2SC1740S-R
Q309-Q311	221281 or 2213570	DTC114YS or RN1207
Q403, Q404	2213285 or 2213284	2SC1740S-S or 2SC1740S-R
Capacitors		
C309, C310	391980107	1 μ F50V, ELECT.
C311, C312	391980227	2.2 μ F50V, ELECT.
C313, C314	391941017	100 μ F16V, ELECT.
C315, C316	391980227	2.2 μ F50V, ELECT.
C317	391942217	220 μ F16V, ELECT.
C318	391980107	1 μ F50V, ELECT.
C401, C402	391980107	1 μ F50V, ELECT.
C403, C404	391980227	2.2 μ F50V, ELECT.
C405, C406	391941017	100 μ F16V, ELECT.
C407, C408	391980227	2.2 μ F50V, ELECT.
C409	391942217	220 μ F16V, ELECT.
C410	391980107	1 μ F50V, ELECT.
Resistors		
R327, R328	5210240	N06HR10KBE
R405, R406	5210240	N06HR10KBE
Socket		
P301A	25050459	NSCT-8P283
P401A	25050460	NSCT-9P242

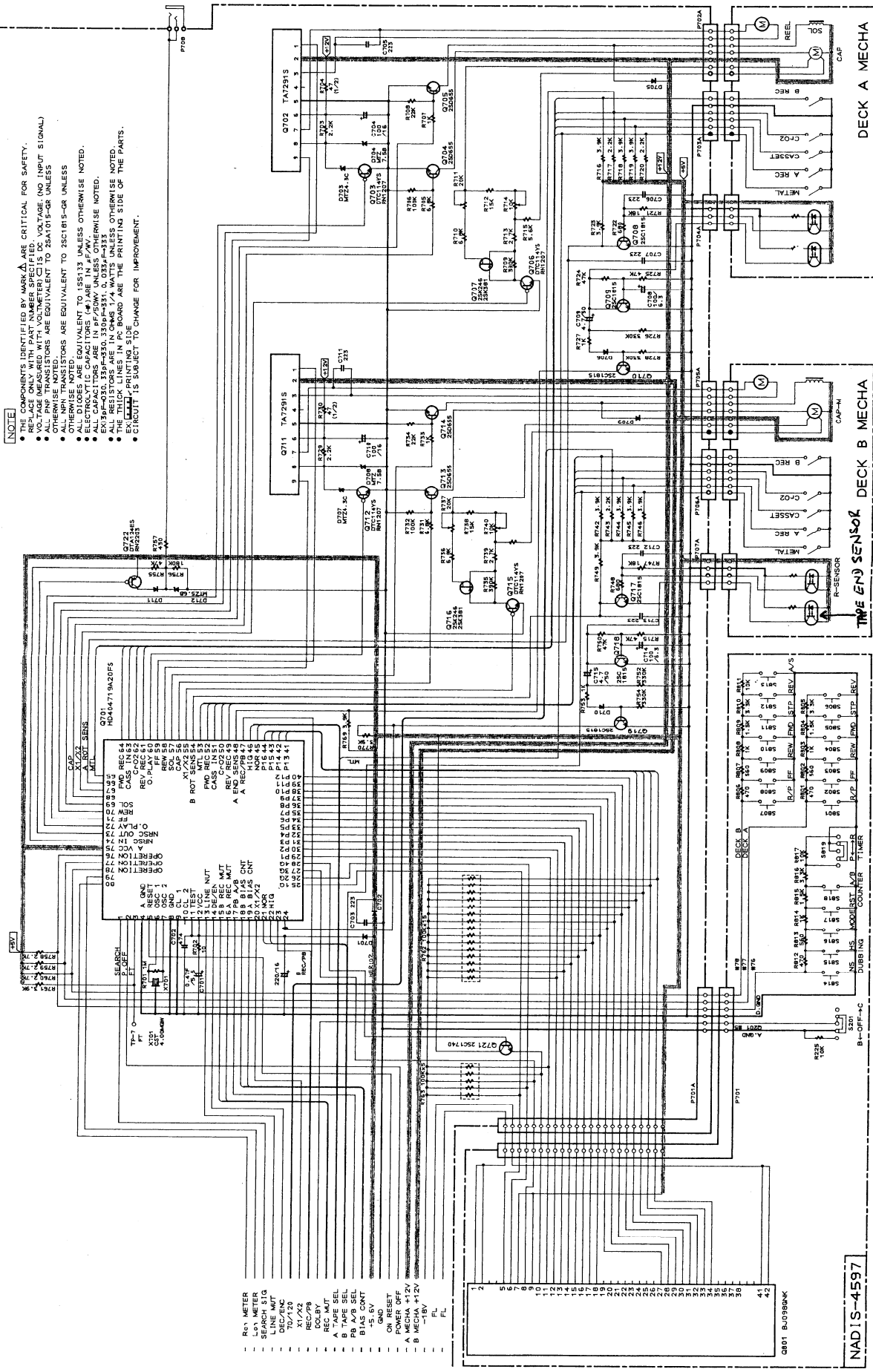
SCHEMATIC DIAGRAM 1/2

A B C D E F G H



SCHEMATIC DIAGRAM 2/2

NAAR-4595



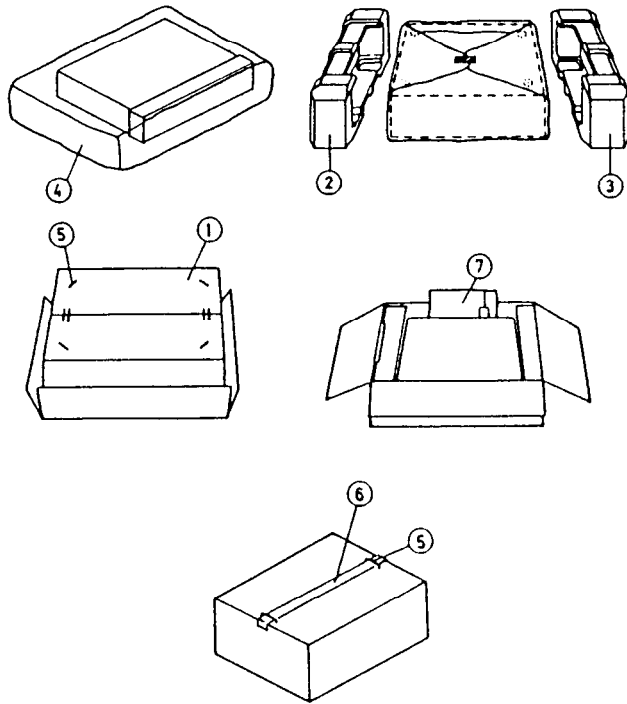
NOTE

- THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- ALL THE TRANSISTORS ARE EQUIVALENT TO 2SC415-GR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1S5133 UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN μ F, UNLESS OTHERWISE NOTED.
- EXCEPT Δ 330, Δ 330P-330, Δ 330P-331, Δ 0.033P-333.
- THE RESISTORS ARE IN Ω , UNLESS OTHERWISE NOTED.
- THE RESISTORS IN \square BOARD ARE THE PRINTING SIDE OF THE PARTS.
- EXCEPT PRINTING SIDE BOARD ARE THE PRINTING SIDE OF THE PARTS.
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

- REL1 METER
- REL2 METER
- REL3 METER
- REL4 METER
- REL5 METER
- REL6 METER
- REL7 METER
- REL8 METER
- REL9 METER
- REL10 METER
- REL11 METER
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- REL98 METER
- REL99 METER
- REL100 METER

NADIS-4597

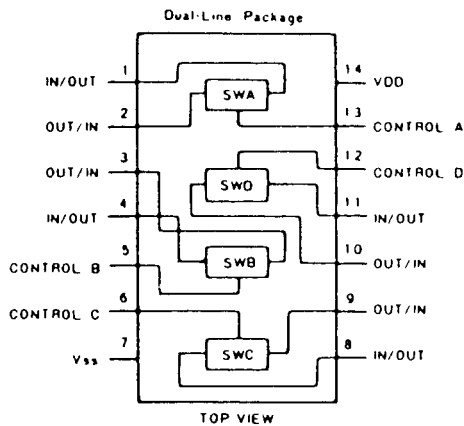
PACKING VIEW



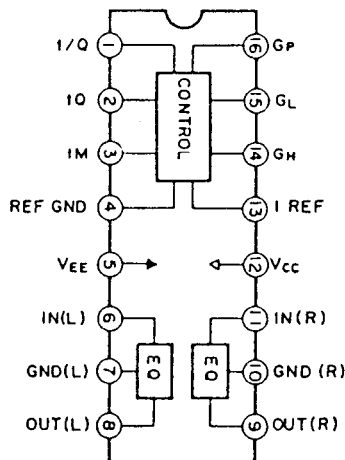
REF. NO.	PART NO.	DESCRIPTION
1	29052491	Carton box [B]
	29052493	Carton box [S]
	29052547	Carton box [X]
	29091452B	Pad (L)
	29091453B	Pad (R)
	29100105	680 × 550 Poly bag
	282301	Sealing hook
29110071	Damplon tape	
Accessory bag ass'y		
29341771	Instruction manual [D]	
29341772	Instruction manual [P/W]	
29100006A	350 × 250 Poly bag	
2010098A	Connection cable	
29358002J	S.S. list	
29365019A	Warranty card [N]	
29365024A	Warranty card [F]	
29365021	Warranty card [X]	
29100107	Poly bag [F]	
25055040	CV-K-2, Conversion plug [W]	
25055251	CV-CP, Conversion plug [X]	

NOTE
 [D]: Only 120V model
 [N]: Only U.S.A. model
 [P]: Only 230V model
 [W]: Only worldwide model
 [F]: Only France model
 [B]: Black model
 [S]: Silver model
 [X]: PX model

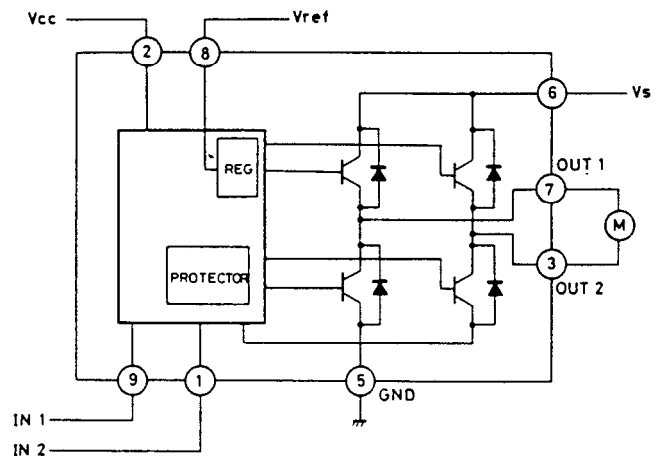
4066 (ANALOG SW)



CXA1198A (REC EQ)

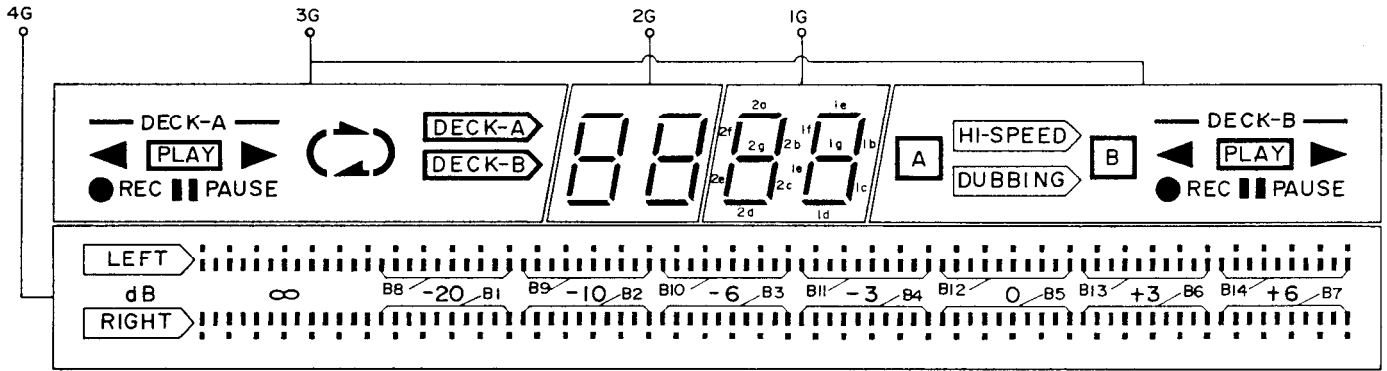


TA7291S (MOTOR DRIVE)



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

FLUORESCENT TUBU (BJ-098GNK)



PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42					
CONNECTION	F	F	N	N	N	N	N	N	P	P	P	P	P	P	N	N	N	N	N	N	N	N	N	P	P	P	P	P	P	P	P	P	4	P	3	P	1	G	1	G	1	G	1	N	N	F	F
	1	1	P	P	C	C	C	C	1	1	1	1	1	1	9	C	C	C	C	C	C	C	8	7	6	5	4	3	2	1	G	1	G	1	G	1	G	1	G	1	N	N	F	F			

NOTE 1) F1, F2 --- Filament
 2) NP ----- No pin
 3) NC ----- No connection

ANODE CONNECTION

	4G	3G	2G	1G
P1	B 1	PLAY (DECK-A)	1 a	1 a
P2	B 2	REC (DECK-A)	1 b	1 b
P3	B 3	PAUSE (DECK-A)	1 c	1 c
P4	B 4	-	1 d	1 d
P5	B 5	DECK-A	1 e	1 e
P6	B 6	DECK-A	1 f	1 f
P7	B 7	HI-SPEED	1 g	1 g
P8	-	A DUBBING B	-	-
P9	B 8	PLAY (DECK-B)	2 a	2 a
P10	B 9	REC (DECK-B)	2 b	2 b

	4G	3G	2G	1G
P11	B 10	PAUSE (DECK-B)	2 c	2 c
P12	B 11	()	2 d	2 d
P13	B 12	DECK-B	2 e	2 e
P14	B 13	DECK-B	2 f	2 f
P15	B 14	DECK-A	2 g	2 g
P16	-	DECK-B	-	-
P17	-	DECK-A DECK-B	-	-
P18	SC	-	-	-

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