

ONKYO SERVICE MANUAL

STEREO CASSETTE TAPE DECK

MODEL TA-2044

Black and silver models

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

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ 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 Format:	4 tracks, 2 channels
Erasing System:	AC erase
Tape Speed:	4.8 cm/sec. (1-7/8 i.p.s.)
Wow & Flutter:	0.04% (WRMS)
Frequency Response:	20–16,000 Hz (30–15,000 Hz \pm 3 dB) (normal position tape) 20–17,000 Hz (30–16,000 Hz \pm 3 dB) (high position tape) 20–19,000 Hz (30–17,000 Hz \pm 3dB) (metal position tape)
Signal-to-Noise Ratio:	60 dB (metal position tape, Dolby NR out). A noise reduction of 10 dB above 5 kHz and 5 dB at 1 kHz is possible with Dolby B NR. A noise reduction of 20 dB at 5 kHz is possible with Dolby C NR.
Input Jacks:	Line IN: 2 Minimum input level: 50mV Input impedance: 50 kohms

ONKYO[®]
AUDIO COMPONENTS

Outputs:	Line OUT: 2 Std output level: 500mV (0 dB) Opt load impedance: over 50 kohms
	Headphone Jack: 1 Opt load impedance: 8 – 200 ohms
Motors:	DC servo motor: 1 DC motor: 2
Heads:	Rec/pb head: Special Hard Permalloy Erase head: Ferrite
Semiconductors:	TR: 57 Diodes: 36 IC: 9 LED: 10
Power Consumption:	27 watts
Dimensions:	435(W) x 112(H) x 371(D) mm (17-1/8" x 4-3/8" x 14-5/8")
Weight:	6.0 kg. (13.2 lbs.)

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

SERVICE PROCEDURES

1. Replacing the lamps

This unit used the lamps listed below.

Circuit No.	Parts No.	Description
PL-902	210149	PL14V 0.06A W3.0
PL-901	210165	PL14V 150mA

Caution; Before replacing the lamps, be sure to unplug the power supply cable.

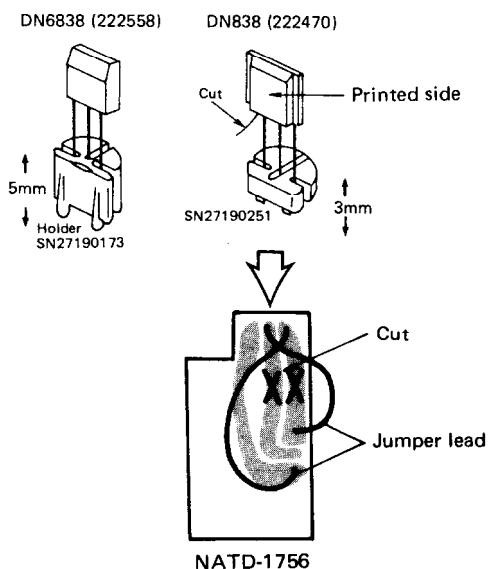
2. Instruction resistance measurement

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

Specifications; D model 500 V $3.3 \pm 0.33 \text{ M}\Omega$
G/W models 500 V more than 10 $\text{M}\Omega$

3. Replacing the Hall ICs

Cautions: As the position of leg of DN6838 and DN838 differ, use the same Hall IC when replacing.



FEATURES

Microcomputer Controlled Multi-Program System

A highly efficient microcomputer is used to provide a wide range of programmable functions. The song location function rapidly winds tape directly to the beginning of any particular song on a cassette up to nine songs away from the present location in either direction. A repeat function repeatedly plays a particular song or the section of a cassette between the [000] tape counter point and either the beginning or end of the cassette up to ten times. There's also an automatic music search function that plays about the first eight seconds of each song in the forward or reverse direction.

Auto Space Rec Mute Button

Press this button while you're making a recording to automatically enter a blank section of tape about five seconds long. Once the blank section has been entered, the TA-2044 will automatically switch to the REC-PAUSE mode. To continue recording, simply press the PLAY button. This function is convenient for temporarily interrupting recording, editing tape during dubbing and inserting unrecorded sections long enough for the automatic continuous song location function to detect.

Special Hard Permalloy Head Designed for Metal Tapes

The special process used to obtain the extra hard permalloy head surface ensures greater resistance to wear and a better saturation flux density in order to take full advantage of high performance metal tapes. The hyperbolic shape also improves head-to-tape contact.

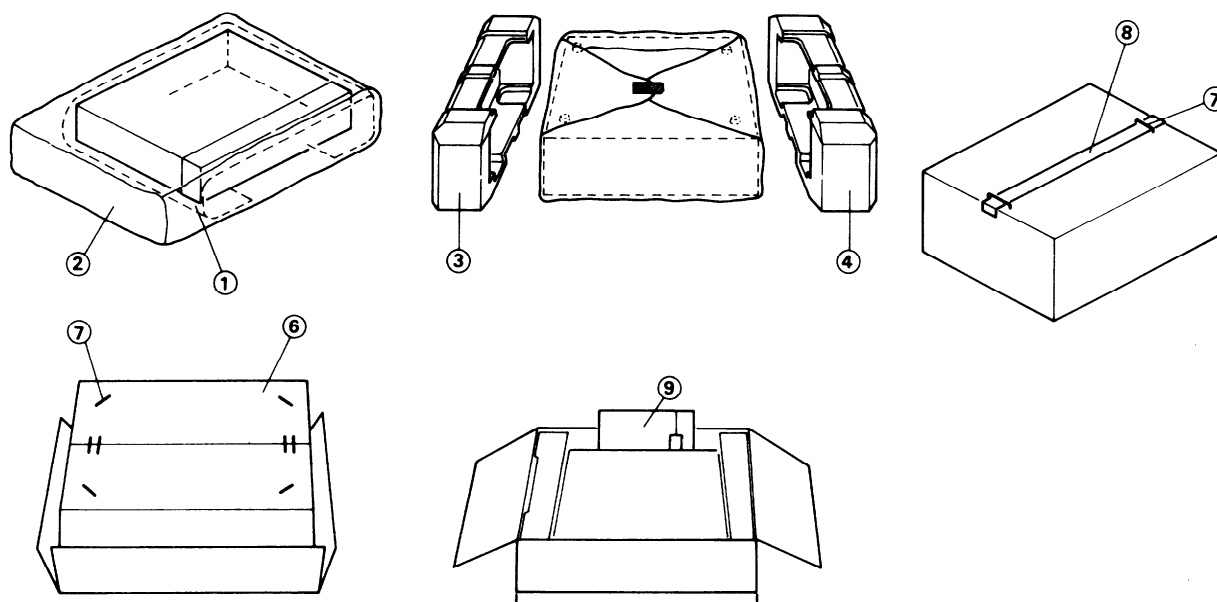
2-Motor Tape Transport with Separate Head Assembly Motor

The tape transport system, along with the heads, determines the level of performance of a cassette deck. To guarantee extremely stable and accurate transport the TA-2044 uses a DC servo controlled capstan motor. This motor is frequency or instantaneous changes in load. A highly reliable, simple drive transmission system and precision vertical cassette holder further enhance overall accuracy and stability. As a result, wow and flutter is under 0.04%. In addition, separate DC motors drive the reel tables and head base and the head assembly is constructed to move silently with no annoying clicks.

Dolby B and C Noise Reduction

Along with standard Dolby B NR, the TA-2044 also has the even more effective Dolby C NR system. Dolby C NR reduces tape background noise by 20 dB at 5 kHz, about 3 times more than Dolby B NR. In addition to its wide band noise reduction, Dolby C NR uses a sliding band technique that varies the band width of noise reduction according to the input level, thereby avoiding noise "pumping". Dolby C NR also has an anti-saturation effect to reduce the chance of tape saturation in the high range. All these features combine to eliminate the adverse effects on tape sound that other noise reduction systems can cause.

PACKING VIEW



D model

REF. NO.	PARTS NO.	DESCRIPTION
1	29095012-1	500x800mm, Protection sheet
2	290311A	620x550mm, Poly bag
3	29090769	Pad, right
4	29090770	Pad, left
6	29050790	Master carton box
7	282301	Sealing hook
8	260012	W-500mm, Damplon type
9	Accessory bag ass'y	
	29340714	Instruction manual
	253074	Connection cable
	29365006-1	Warranty card
	29358002	Service station list
	29100005	220x330mm, Poly bag

G/W model

REF. NO.	PARTS NO.	DESCRIPTION
1	29095012-1	500x800mm, Protection sheet
2	290311A	620x550mm, Poly bag
3	29090769	Pad, right
4	29090770	Pad, left
6	29050790	Master carton box
7	282301	Sealing hook
8	260012	W-500mm, Damplon tape
9	Accessory bag ass'y	
	29340715	Instruction manual
	253074	Connection cable
	29365005-3	Warranty card (V)
	25055040	CV-K-2, Conversion plug (W)
	29100005	220x330mm, Poly bag

(V): Only West Germany model

(W): Only 120/220V model

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
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
 TW-2111 : Torque meter

Item	Connection of instrument	Line input	Test tape	Mode	Output indicator	Adjustment point	Adjust	Remarks	
1	Playback torque		TW-2111	PB	TW-2111	R709	35 to 55gcm		
2	Tape speed	Frequency counter to LINE output terminal	MTT-111	PB	Frequency counter	Semi-fixed on the moter	3,000 to 3,010Hz		
3	Head azimuth	AC voltmeter and oscilloscope to LINE output terminal	VTT-658	PB	AC voltmeter	Head azimuth screws	Maximum and same phase at channels L and R.	See fig. 1 Set the semi-fixed resistors R123 and R124 to center position.	
4	Playback level	AC voltmeter to terminals TP-401 and TP-402	MTT-150	PB	AC voltmeter	R123 (Ch. L) R124 (Ch. R)	580mV		
5	Meter		MTT-150	PB	Level meter	R606	0dB indicator light on		
6	Bias current	Fig. 2	1kHz, -20dB and 12kHz, -20dB	NEW XL-II 90	REC/PB	AC voltmeter	R423 (Ch. L) R424 (Ch. R)	Same level at REC/PB	INPUT VOLUME maximum
7	Record level	Fig. 2	1kHz		REC PAUSE	AC voltmeter	Attenuator or AF OSC output	580mV	INPUT VOLUME maximum
					REC/PB	AC voltmeter	R401, R402	Same level at REC/PB	

FF, REW torque 70 ~ 130gcm

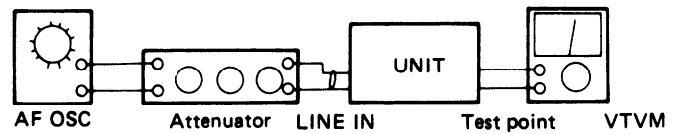
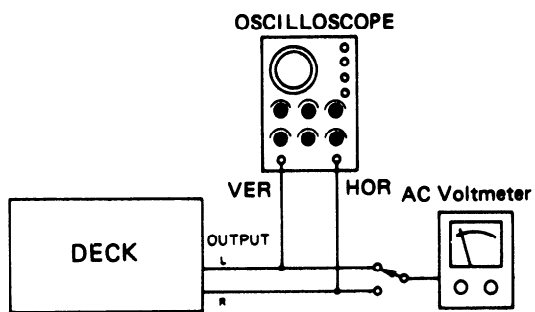
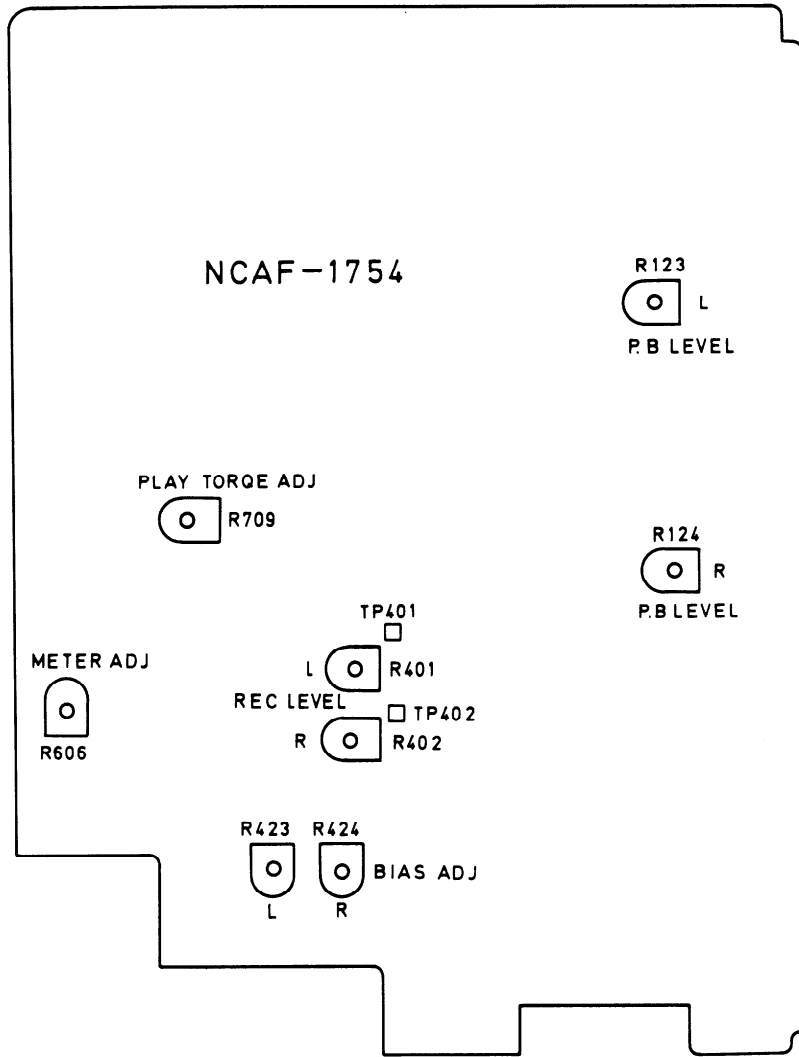


fig-2

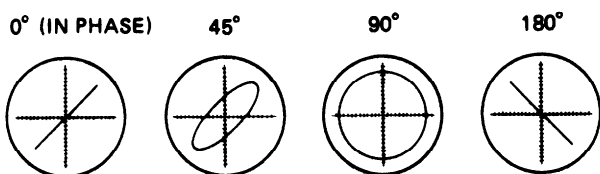
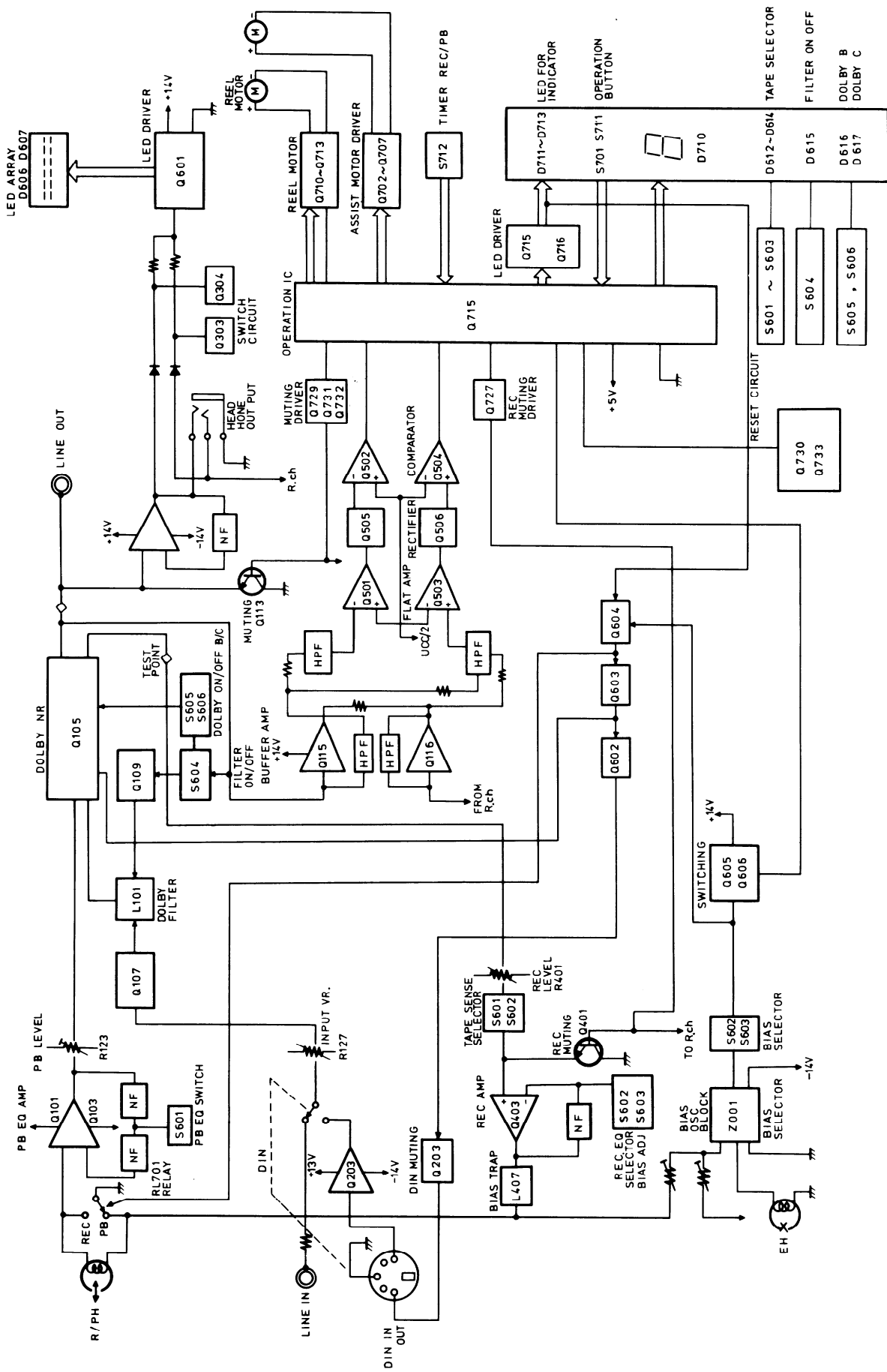
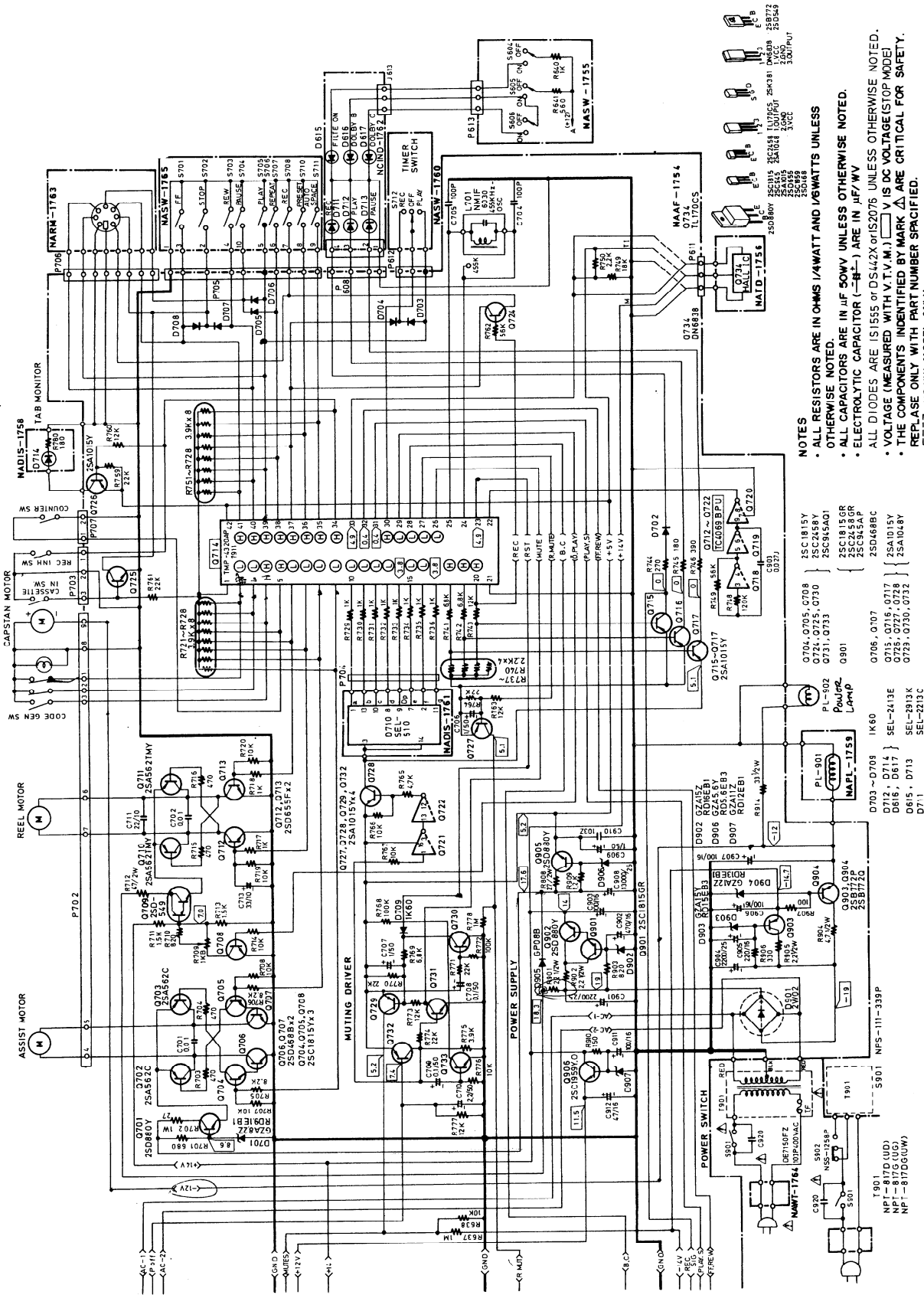


fig. 1 Confirming phase relationship

BLOCK DIAGRAM

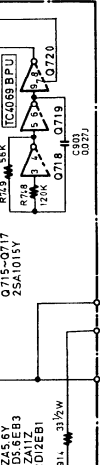
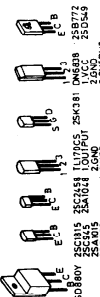


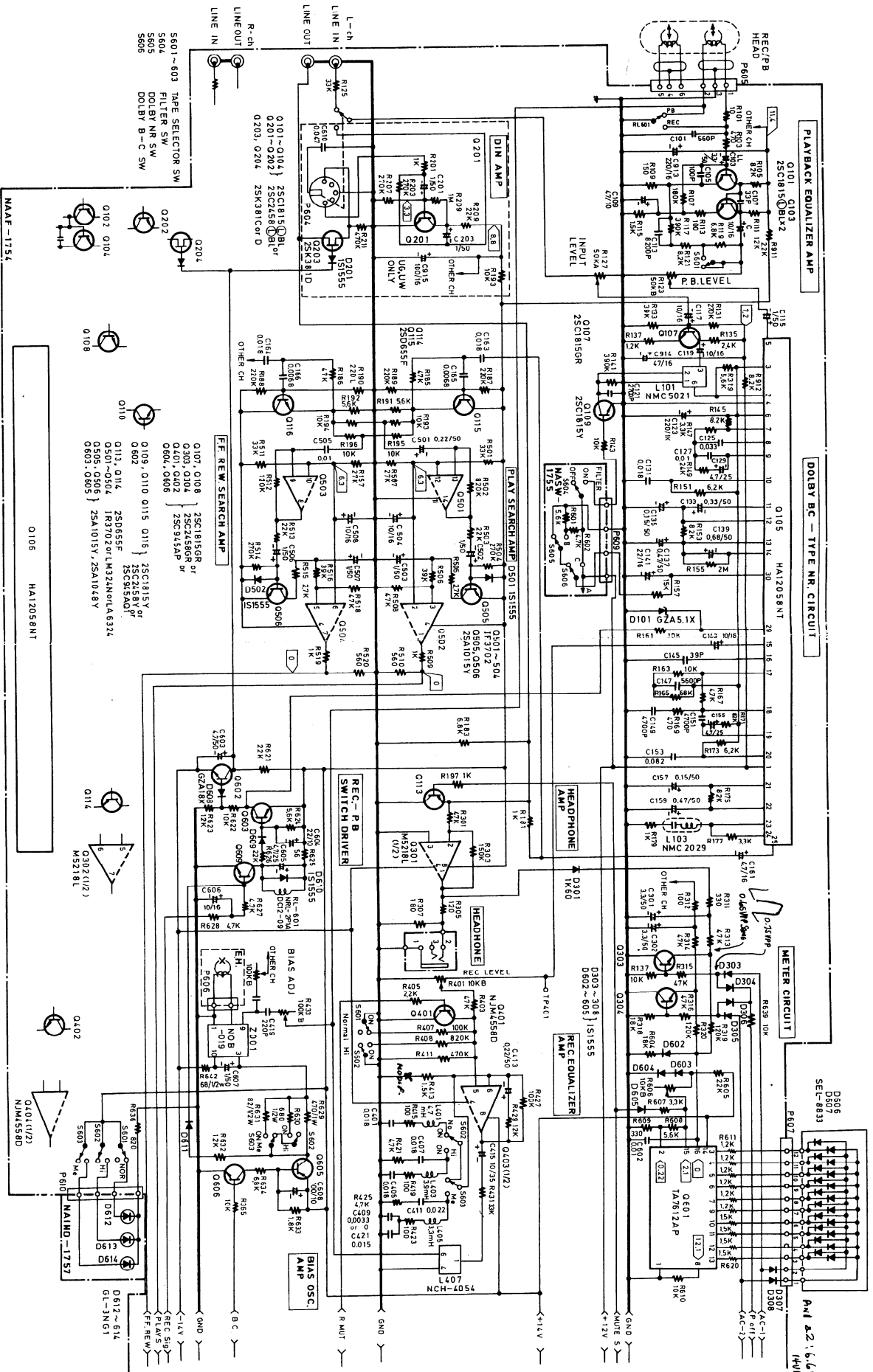
SCHEMATIC DIAGRAM



- NOTES**
- ALL RESISTORS ARE IN OHMS /WATT AND /5WATTS UNLESS OTHERWISE NOTED.
 - ALL CAPACITORS ARE IN μ F 50V UNLESS OTHERWISE NOTED.
 - ELECTROLYTIC CAPACITOR (—E—) ARE IN μ F /V
 - ALL DIODES ARE 1S1555 OR DS42X or 1S2076 UNLESS OTHERWISE NOTED.
 - VOLTAGE (MEASURED WITH V.T.V.M.) \square V IS DC VOLTAGE (STOP MODE).
 - THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY.
 - PLEASE ONLY WITH PART NUMBER SPECIFIED.
 - \square UG.UW MODEL ONLY.

- 0704, 0705, 0708 1SC1815Y
 0721, 0725, 0730 25C258RY
 0731, 0733 25C945A01
 0901 { 35C1815CR
 25C2455GR
 25C945AP
- 0706, 0707 25D488RC
 0712, 0714, 0717 25A1015Y
 0725, 0727, 0728 25A1048Y
 0729, 0730, 0732 25A1048Y
 0711 03B7J
- 0703 ~ 0708 1K60
 0712, 0714 } SEL-2413E
 0616, 0617 }
 0615, 0713 SEL-2913 K
 0711 SEL-2913 C

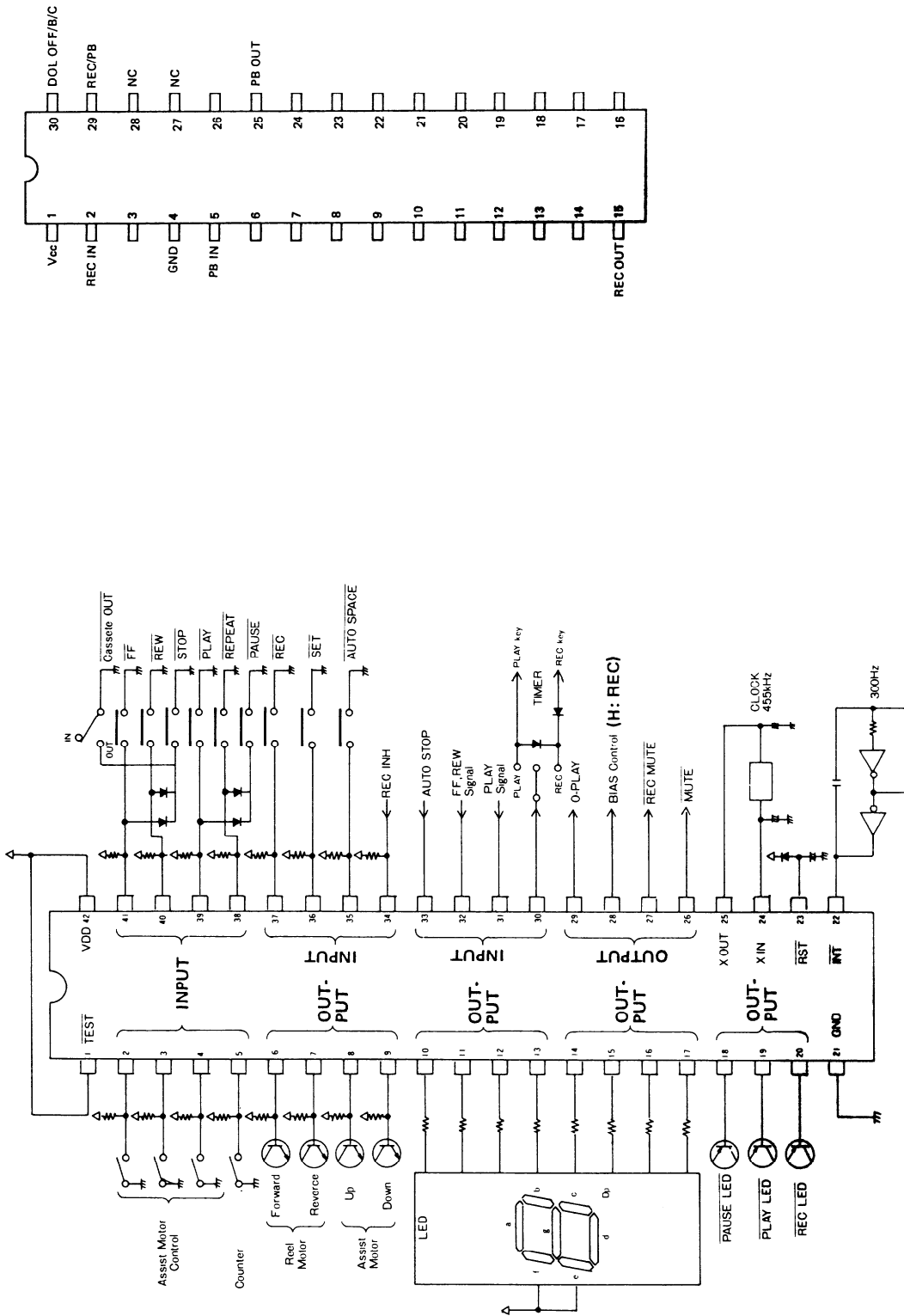




ONKYO CORPORATION

TMP4320AP (7911) MICROCOMPUTER

HA12058NT (DOLBY B & C TYPE NOISE REDUCTION SYSTEM)



CHASSIS EXPLODED VIEW-PARTS LIST

REF. NO.	PARTS NO.	DESCRIPTION	REF. NO.	DESCRIPTION	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
A1	27110193C	Front bracket	A504	Guide, eject	27267238A	Guide, eject	C920a	27300601	Cover, capacitor
A2	27140753	Bracket, headphone	A505	Guide, eject (B)	272672389	Guide, eject (B)	D606, D607	225129	SEL-8833, LED, level meter
A3	27140811	Bracket, pcb	A506	Guide, power	27267206A	Guide, power	PL902	210149	PL14V0.06AW-3.0, Lamp
A4	27190226	Holder, LED	A507	Guide, power (B)	27267235A	Guide, power (B)	P602	25045132	HKJ-1607-01-020, Stereo headphone jack
A5	27300532	Holder	A508	Plate	27262212	Plate	△ P901	253099B	AS-UC3, Power supply cable (D)
A6	28191203	Clear plate	A509	Clear plate, tab	28191204	Clear plate, tab	P902	253083-1	AS-CEE, Power supply cable (G/W)
A7	28130196	Dial plate	A510	Clear plate, tab (B)	28191205	Clear plate, tab (B)	△ S901	2000218	NSAS-12P-122, Socket for meter
A8	28199095	Film	A511	Guide, push	28191206	Guide, push	△ S902	25035375	NPS-111-L399P, Power switch
A9	834430108	3TTS+10B (BC), Tapping screw	A512	Guide, push (B)	27267240	Guide, push (B)	△ S901	25065123	NSS-1258P, Voltage selector switch (W)
A10	833430080	3TTP+8P (BC), Tapping screw	A513	Facet	27267241	Facet	△ T901	230741-1	NPT-817D, Power transformer (D)
A11	27273022	Joint C	A515	Facet, power	28198587	Facet, power		230742-1	NPT-817G, Power transformer (G)
A12	27115139A	Side bracket	A516	Guide, selector	28198577	Guide, selector	U1	270743-1	NPT-817DG, Power transformer (W)
A13	27130331D	Bracket, power transformer	A519	Guide, selector (B)	27267264	Guide, selector (B)		11128554	NAAF-1754, Rec/pb amplifier pc board ass'y (D)
A14	86414010	FWN+10FN, Flange nut	A520	Guide, timer	27267265	Guide, timer		11134554A	NAAF-1754a, Rec/pb amplifier pc board ass'y (G/W)
A15	870065	Washer, power transformer	A522	Guide ass'y	27267243A	Guide, timer (B)	U2	11128555	NASW-1755, Dolby switch pc board ass'y
A16	838440109	4TTB+10C (BC), Tapping screw	A523	2TTP+6B (BC), Tapping screw	27267244A	Guide, timer (B)	U3	11128556	NATD-1756, Hall IC pc board ass'y
A17	28175074	Insulator plate	A524	3TTB+6B (BC), Tapping screw	27267285	Guide ass'y (B)	U4	11128557	NAIND-1757, Tape selector indicator pc board ass'y
A18	24601143	Tape counter	A525	3TTB+8B (BC), Tapping screw	833420068	2TTP+6B (BC), Tapping screw	U5	11128558	NADIS-1758, Tab indicator pc board ass'y
A19	834426068	2.6TTS+6B (BC), Tapping screw	A526	3TTB+8B (BC), Tapping screw	838430068	3TTB+6B (BC), Tapping screw	U6	11128559	NAPL-1759, Lamp pc board ass'y
A20	834430068	3TTS+6B (BC), Tapping screw	A527	3TTB+8B (BC), Tapping screw	838430068	3TTB+8B (BC), Tapping screw	U7	11128560	NASW-1760, Timer switch pb board ass'y
A21	831430088	3TTB+8B, Tapping screw	A631	Cassette lid	838430068	Cassette lid	U8	11128561	NADIS-1761, LED pc board ass'y
A22	834426068	2.6TTS+6B (BC), Tapping screw	A632	Clear plate	28400129	Cassette lid	U9	11128562	NAIND-1762, Operation indicator pc board ass'y
A23	834426068	2.6TTS+6B (BC), Tapping screw	A633	Window	28191207	Clear plate	U10	11128563	NARM-1763, Remote control terminal pc board ass'y
A24	838130088	3TTB+8B, Tapping screw	A801	Window (B)	28400147	Window	U11	11128564	NAWT-1764, Terminal pc board ass'y
A25	82143006	3P+6F (BC), Pan head screw	A802	Special screw	28400148	Window (B)	U12	11128565	NASW-1765, Operation switch pc board ass'y
A26	82143006	2.6P+4F (BC), Pan head screw	A803	Nut	28400147	Window (B)	Z0001	244051	NDM-46, Tape mechanism ass'y
A27	82142604	Bushing	A804	Washer	27300397-1A	Special screw			
A28	28170014	Film	A805	Bottom board	800134	Nut			
A29	28199091	Cushion	A806	Leg	870100	Washer			
A30	28140492	Back panel (D)	A807	3TTB+6B (BC), Tapping screw	27170150	Knob, power			
A31	27120524	Back panel (G)	A808	Knob, power (B)	27175011C	Knob, power (B)			
A32	27120526	Back panel (W)	A809	Knob, eject	28321024	Knob, power			
A33	270025	SR-3P-4, Strainrelief (D)	A810	Knob, eject (B)	28321027	Knob, power			
A34	270280	SR-4K-4, Strainrelief (G/W)	A811	Knob, selector (B)	28321028	Knob, eject (B)			
A35	801230	3TTS+8BQ (BC), Tapping screw	A812	Knob, selector (B)	28321028C	Knob, power			
A36	834430108	3TTS+10B (BC), Tapping screw	△ C920	Knob, band	28321031	Knob, power (B)			
A37	82142604	2.6P+4F (BC), Pan head screw		Knob, timer	28321032	Knob, power (B)			
A38	28140373	7x30x10mm, Cushion		Knob, timer (B)	28321033	Knob, power (B)			
A39	27140577	Bracket, DIN (G/W)		Knob, counter	28321034	Knob, power (B)			
A40	82143006	3P+6F (BC), Pan head screw (G/W)		Knob R	28321034	Knob, power (B)			
A41	28184180	Top cover		Knob L (B)	28140185	Knob L (B)			
A42	28184181	Top cover (B)		Cushion	27180179	Cushion			
A43	838440089	4TTB+8B (BC), Tapping screw		Spring	DE7150FZ103PAC400V,	Spring			
A44	838430088	3TTB+8B (BC), Tapping screw		Capacitor IS	3500065A	Capacitor IS			
A45	28140408	3x10x36mm, Cushion							
A46	11128121	Front panel ass'y							
A47	11148121	Front panel ass'y (B)							
A48	28125133	End cap L							
A49	28125133A	End cap L (B)							
A50	28125134	End cap R							
A51	28125135A	End cap L (B)							

NOTES: (D): Only 120V model
 (G): Only 220V model
 (W): Only 120/220V model
 (B): Only back model

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

TAPE MECHANISM-PARTS LIST

PLACE	REF. NO.	PARTS NO.	DESCRIPTION	PLACE	REF. NO.	PARTS NO.	DESCRIPTION
C3	1	24610960	Chassis	E3	129	801250	2x4mm, Pan head screw
	10	24610376	Brake rubber	D3	131	82512614	2.6x14mm, Pan head screw
C4	11	24610961	Brake plate	B5, B6, C7	133	833426105	2.6x10mm, Tapping screw
C4	12	24605466	Spring	B3	134	833126055	2.6x5mm, Tapping screw
	21	24610962	Head base ass'y	F4	136	837120058	2.6x5mm, Tapping screw
F3	21a	24610966	Head base	E2, F3	139	24610349	1.8x3.2x0.5mm, Washer
G2	21b	24610967	Head stand	E5	140	24610515	2.6x4.7x0.25mm, Washer
G2	21c	24605185	Spring	E5	141	24610972	2.6x7x0.13mm, Washer
G1	21d	82512012	2x12mm, Baining screw	F3	142	24610973	2.7x6x0.5mm, Washer
G1	21e	801198	2x14mm, Flange screw	A3	151	24610959	Cassette panel
G2	21f	24600018	Rec/pb head <i>24600040</i>	F3	152	24602232	Belt
F1	21g	24600041	Erase head	G5	158	24610939	Bracket R
E3	22	893030	E3, Circlip	F4	164	24605188	Cassette holding spring
G3	32		Connector ass'y		168	24610940	Cassette holder ass'y
G2	33		Connector ass'y	E1	168a	24610949	Bracket
F2	46	24610943	3mm, Stellball	F5	168b	24610849	Holder R
F2	47	24610963	Head holding plate	C2	168c	24610848	Holder L
E3	53	24610964	Spring holder	C2, F4	168d	24605463	Cassette spring
E3	54	24605466	Spring	E1	168e	835426082	2.6x8mm, Flat head tapping screw
E3	56	24602233	Reel stand		172	24610974	Bracket ass'y
C3	63	24606179	Tab/Cassette in detector pc board ass'y	B2	172a	24610975	Bracket L
C4	63a	24606180	Pc board	A1	172b	24610976	Canceller lever ass'y
C4	63b	25055100	Post	C1	172c	24605407	Spring
C4	63c	25035389	Switch	B1	172d	893030	E3, Circlip
	64	24605447	Spring	C1	179	24610942	Damper unit
E3	70	24603274	Switch lever	C1	180	24605456	Spring
	80	24601144	PAD unit ass'y	C1	181	891024	Ring CS
A5	80a	24610968	Chassis	F1	184	24606168	Lamp holder ass'y
A4	80b	24601103	Motor	F2	184a	24610498	Lamp holder
C4	80c	24606182	Leafswitch	F2	184b	24606173	14V, 50mA, Lamp
C5	80d	24602133	Cam gear				
B5	80e	82112003	2x3mm, Pan head screw				
C4	80f	833125209	2.5x20mm, Pan head screw				
B4	80g	24606181	Pc board				
B4	80h	25055106	Post				
A5	90	260208	Binder				
	94	24601145	Reel motor ass'y				
B6	94a	24601054	Reel motor				
B5	94b	24605467	Spring				
C5	94c	24602235	Wheel lever				
C5	94d	24602236	Wheel				
C5	94e	24610969	Washer				
C5	94f	24610970	Felt				
C5	94g	24602237	Motor wheel				
C5	94h	24610981	Washer				
B5	94i	24610374	Washer				
B6	94j	24610373	Spring holder				
E5	105	24602240	Flywheel				
D5	107	24605452	Thrust spring				
D5	110	24602134	Flat belt				
E4	112	23610673	Washer				
	115	24610965	Flywheel plate ass'y				
C6	115a	24610971	Flywheel plate				
C6	115b	24610671	Thrust holder				
B7	115c	24601085	Capstan motor				
C6	115d	24610451	Cushion				
D6	115e	801261	Pan head screw				
C5	115f	24610807	Spacer				
C7	115g	24601107	Motor pulley				
F3	121	24602234	Pinch arm				
E4	123	24605370	Spring				
F2	125	833125069	2.5x8mm, Pan head screw				
B1, B6, E6	126	833125059	2.5x5mm, Pan head screw				

