Ref. No. 3456

ONKYO SERVICE MANUAL

CASSETTE TAPE DECK
MODEL K-611

Black and Silver model

MP, MPⓋ	230VAC, 50Hz
MW	120/220VAC, 50/60Hz

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.

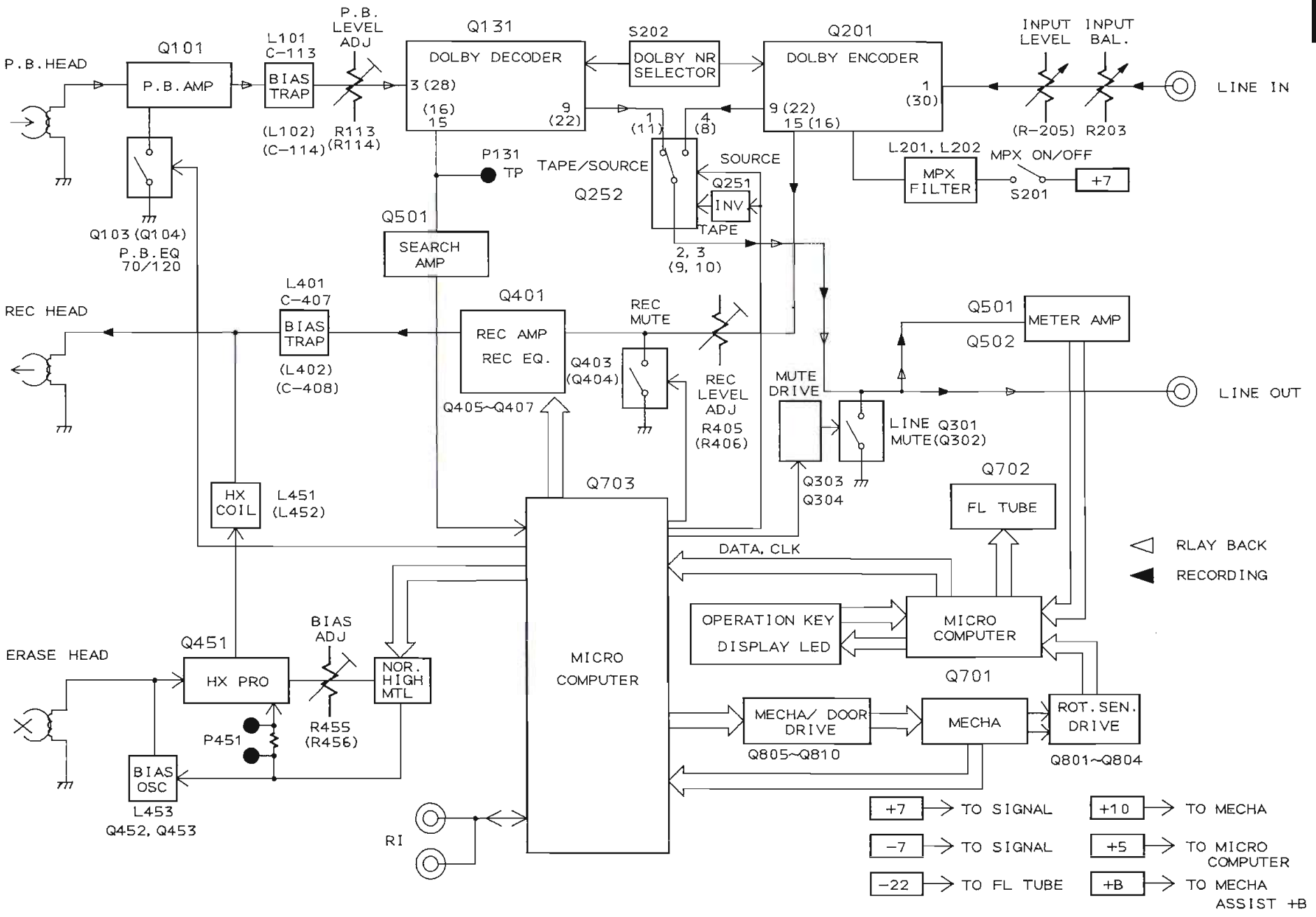
ONKYO®
AUDIO COMPONENTS

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:	0.045% (WRMS) 0.09 (DIN)
Frequency Response:	20—17,000Hz (normal) (30—16,000Hz ±3dB) 20—18,000Hz (high) (30—17,000Hz ±3dB) 20—19,000Hz (metal) (30—18,000Hz ±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: 80 mV Input impedance: 50 kohms
Output Jacks:	LINE OUT: 2 Standard output level: 500 mV (0dB) Optimum load impedance: over 50 kohms
Motors:	DC servo motor: 1 DC motor: 3
Heads:	REC/PB: Special Hard Permalloy x 2 Erase head: Ferrite x 1
Power Supply Rating:	European models AC 230 V, 50Hz Worldwide models AC 120 and 220 V, Switchable 50/60 Hz
Power Consumption:	14 watts
Dimensions:	275(W) x 120(H) x 314(D)mm 10 13/16" x 4 3/4" x 12 3/8"
Weight:	4.5 kg. (9.9 lbs.)

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

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

CASSETTE LOADING FUNCTION

For the operation of this function, switch circuits are available as follows;

1. OPEN SW (Mecha. Drwg. 100: Upper 130)
2. CLOSE SW (Mecha. Drwg. 100: Lower 131)
3. DOOR PRESS SW (Mecha. Drwg. 103: Appx. 103)
4. HALF PRESS SW (Mecha. Drwg. 102: Appx. 103)
5. OPEN/CLOSE SW (Front panel)

1. OPEN SW

The Loading Motor is to rotate, while operating OPEN, un til turned ON this SW by the projection of Cam Gear.

Then, because of this SW turned ON, the microcomputer will make a decision that OPEN operation is finished, and stop the Loading Motor.

If not turned ON this SW within 5 sec. after started OPEN operation, the microcomputer will judge the state to be wrong and then rotate the Loading Motor backwards to make CLOSE operation.

2. CLOSE SW

The Loading Motor is to rotate, while operating CLOSE, until turned ON this SW by the projection of Cam Gear.

Then, because of this SW turned ON, the microcomputer will make a decision that CLOSE operation is finished, and stop the Loading Motor.

If not turned ON this SW within 5 sec. after started CLOSE operation, the microcomputer will judge the state to be wrong and then rotate the Loading Motor backwards tomake OPEN operation.

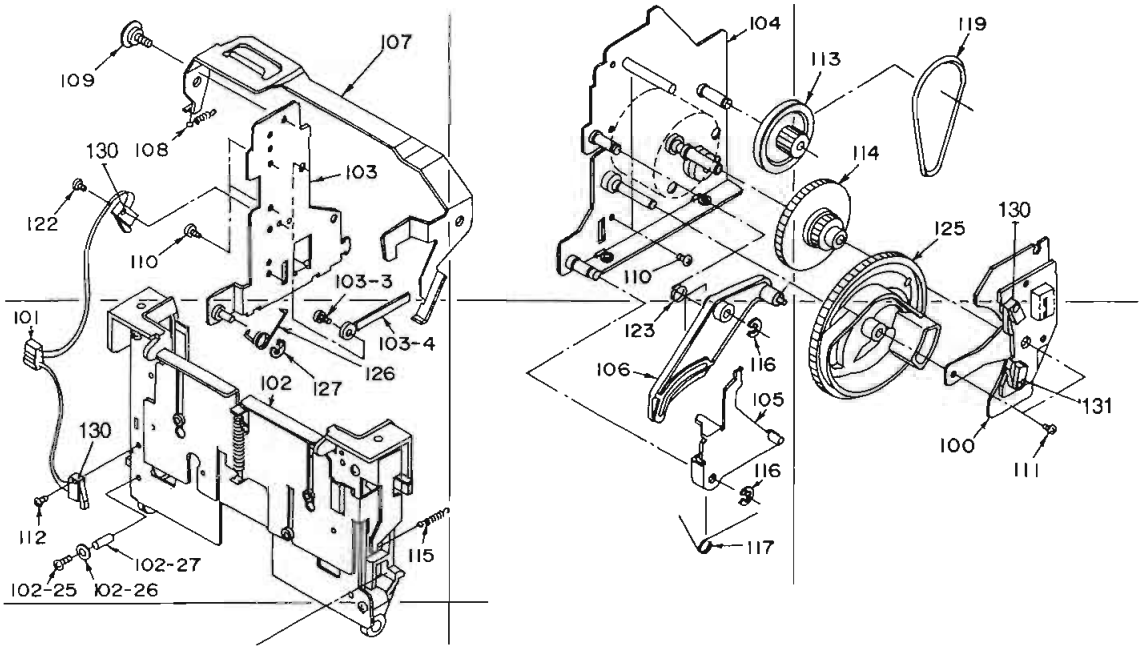
3. DOOR PRESS SW

Under OPEN state, by pressing DOOR manually this SW is to be ON and by letting DOOR go to the original position, this SW will be OFF. The microcomputer will detect this ON to OFF trailing and then rotate Loading Motor so as to carry out CLOSE operation.

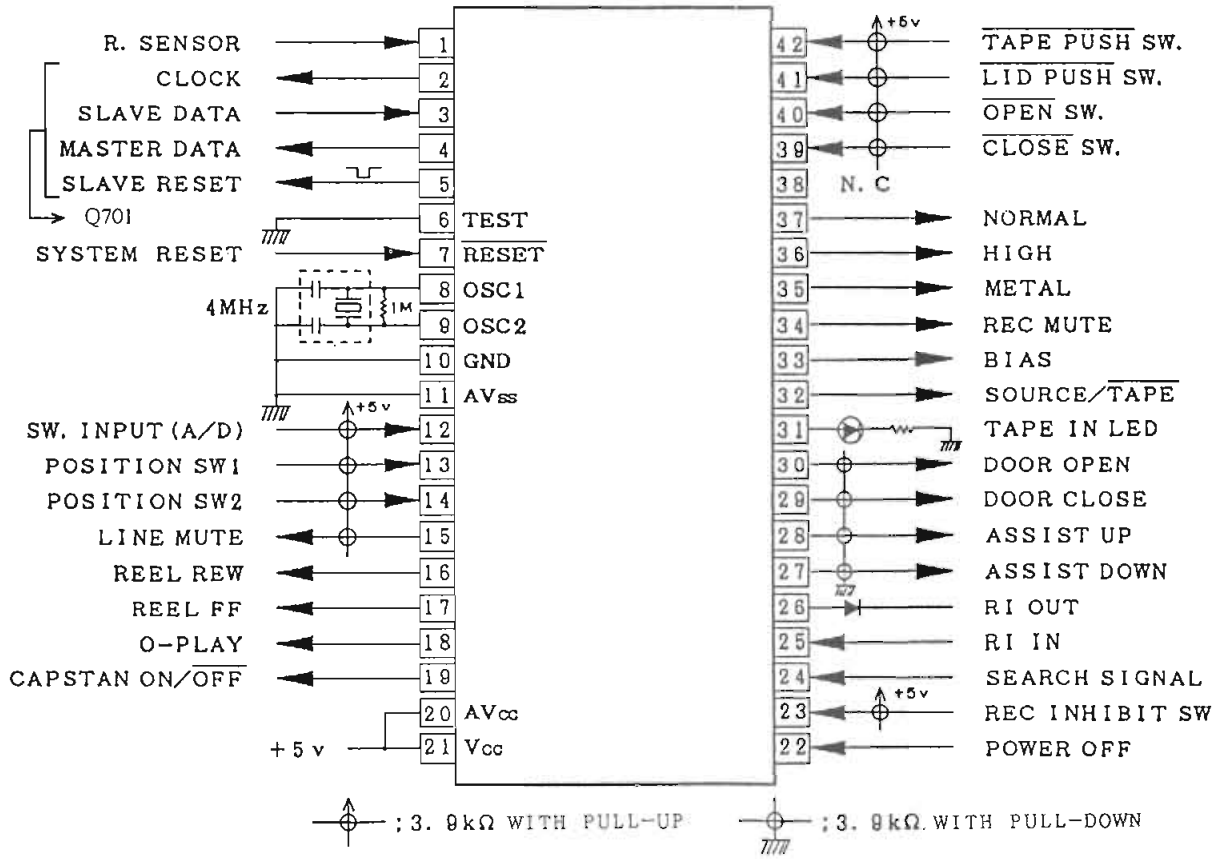
Such an operation, however, shall be carried out only in case where cassette is not put.

4. HALF PRESS SW

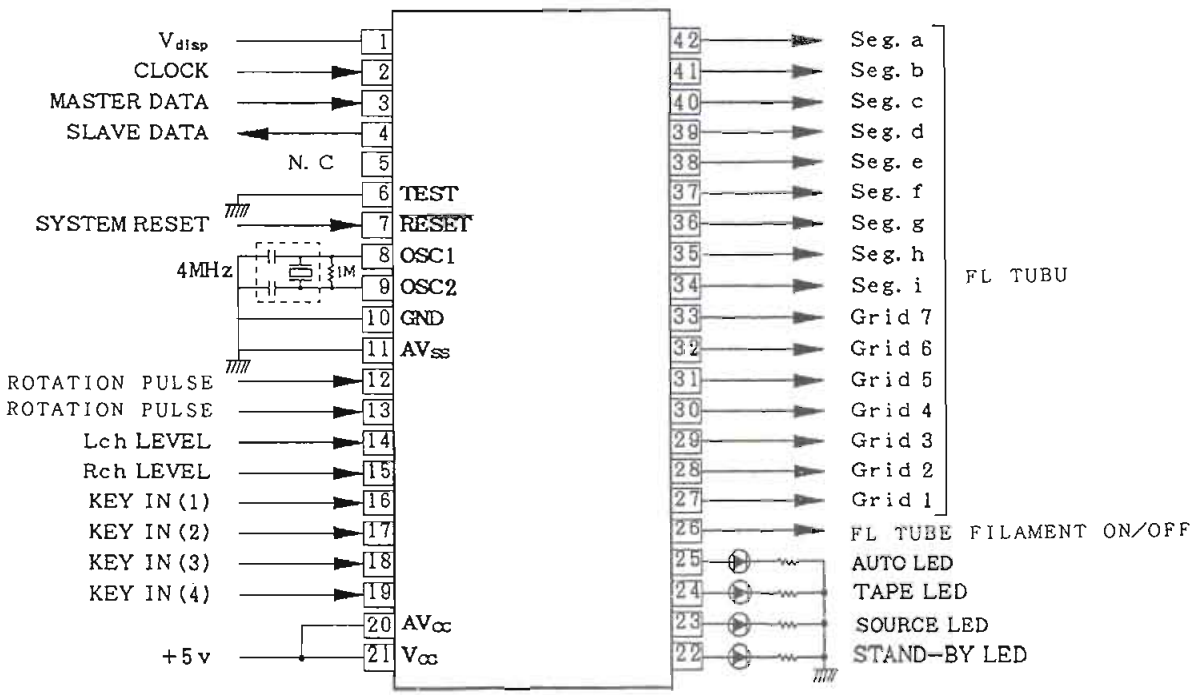
When set the Cassette Half under OPEN condition, this SW is to be ON by pressing upper part of the Cassette Half downward. The microcomputer will detect this OFF to ON rise and then rotate Loading Motor so as to carry out CLOSE operation.



HD404316A13S (MAIN MICOM)



HD404316A06S (COUNTER MICOM)



MICROCOMPUTER TERMINAL DESCRIPTION

HD404316A13S (MAIN MICOM)

Port no.	Name	I/O	Description
1	R.SENSOR	IN	Reel rotation sensor
2	CLOCK	OUT	Clock to counter micom
3	SLAVE DATA	IN	Data input from counter micon
4	MASTER DATA	OUT	Data output to counter micon
5	SLAVE RESET	OUT	Counter micon reset, active"L"
6	TEST		
7	$\overline{\text{SYSTEM RESET}}$	IN	System micon reset
8	OSC 1		System clock 4 MHz
9	OSC 2		
10	GND		
11	AVss		
12	SW.INPUT	IN	Tape mechanism switch (TAPE IN, METAL, HIGH)
13	POSITION SW 1	IN	Head position detection switch
14	POSITION SW 2		
15	LINE MUTE	OUT	Line muting "H"
16	REEL REW	OUT	Reel motor control
17	REEL FF		
18	O-PLAY	OUT	Reel motor torque control
19	CAPSTAN	OUT	Capstan motor drive
20	AVcc		
21	Vcc		+ 5 V
22	POWER OFF	IN	Power off detection
23	REC INH. SW	IN	Recoding prevention"H"
24	SEARCH SIGNAL	IN	Search signal input
25	RI IN	IN	RI cord input
26	RI OUT	OUT	RI cord output
27	ASSIST DOWN	OUT	Assist motor control active "H"
28	ASSIST UP		
29	DOOR CLOSE	OUT	Door motor control active "H"
30	DOOR OPEN		
31	TAPE IN LED	OUT	Tape in indication
32	SOURCE/$\overline{\text{TAPE}}$	OUT	Source/tape selection
33	BIAS	OUT	Bias control active "H"
34	REC MUTE	OUT	Recoding muting"H"
35	METAL	OUT	P. B, REC Equalizer control active "H"
36	HIGH		
37	NORMAL		
38	NC		
39	$\overline{\text{CLOSE}}$ SWITCH	IN	Door OPEN/CLOSE detection
40	$\overline{\text{OPEN}}$ SWITCH		
41	$\overline{\text{LID PUSH}}$ SW	IN	Door push detection
42	$\overline{\text{TAPE PUSH}}$ SW	IN	Tape push detection

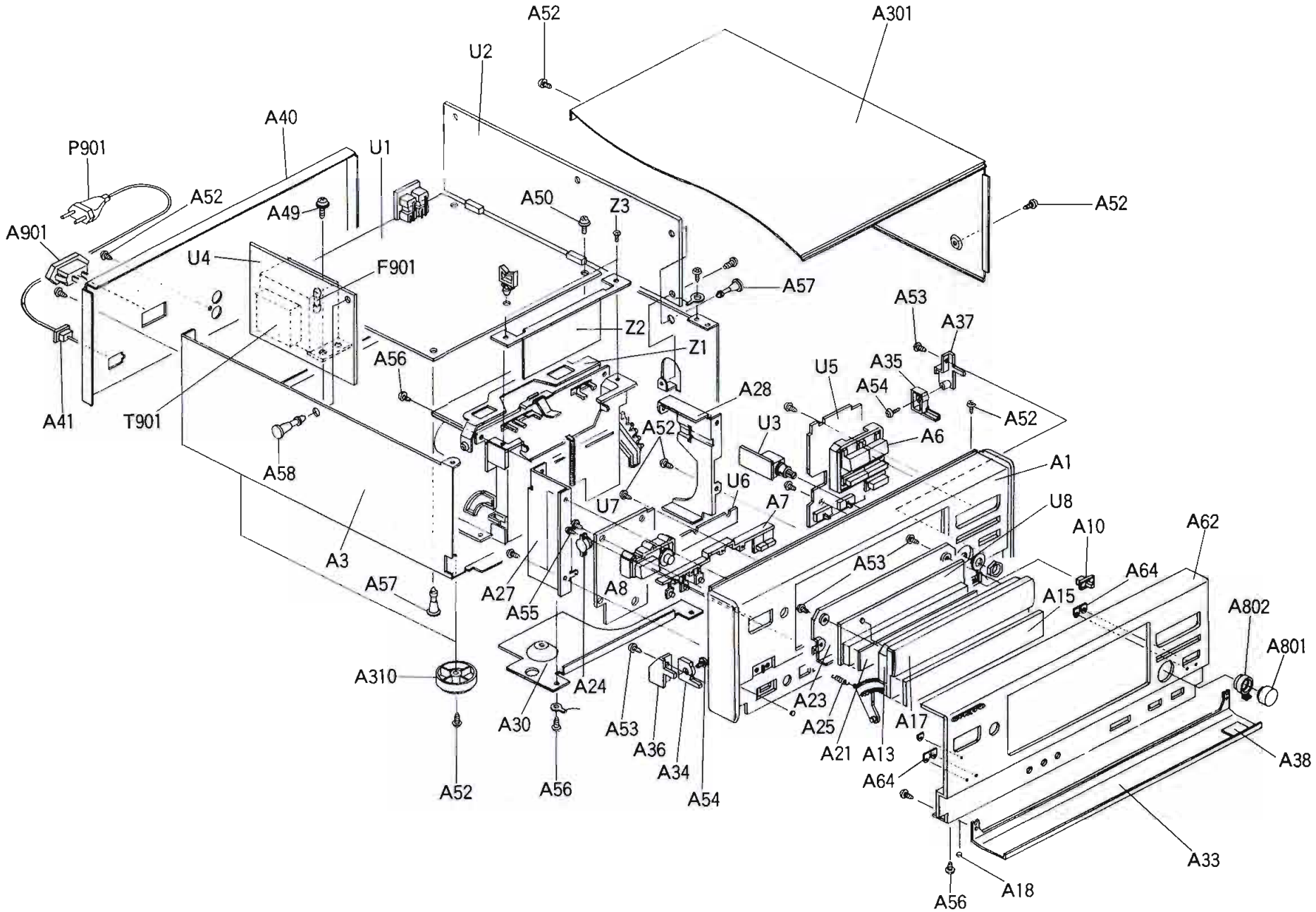
CHASSIS-EXPLODED VIEW PARTS LIST

REF.NO.	PARTS NO.	DESCRIPTION
A1	27110779A	FRONT BRACKET(B)
	27110780A	FRONT BRACKET(S)
A3	27100271	CHASSIS
A6	28324858	KNOB (PLAY)(B)
	28324859	KNOB (PLAY)(S)
A7	28324860	KNOB (REC) (B)
	28324861	KNOB (REC) (S)
A8	28324880	KNOB (POW) AS(B)
	28324881	KNOB (POW) AS(S)
-a	28324848	KNOB (POW) (B)
	28324849	KNOB (POW) (S)
-b	28324913	KNOB (OPEN)(B)
	28324847	KNOB (OPEN)(S)
A10	28324118	KNOB (T) (B)
	28324889	KNOB (T) (S)
A13	27301761A	CASSETTE FRAME AS
A14	27301760	CASSETTE FRAME
A15	28191663A	CLEAR PLATE
A17	27301756	CASSETTE LID (B)
	27301757	CASSETTE LID (S)
A18	28140860	RUBBER CUSHION
A21	28133300A	BACK PLATE (B)
	28133301A	BACK PLATE (S)
A23	28184546	COVER (F)
A24	27301782	DAMPER
A25	27180451	SPRING (LID)
A27	27130634B	BRACKET (L)
A28	27130722	BRACKET (R)
A30	27150362	SHIELD PLATE
A33	28148279A	DOOR(B)
	28148280A	DOOR(S)
A34	28180112	HINGE (L)
A35	28180113	HINGE (R)
A36	28180107A	HINGE (HL)
A37	28180108A	HINGE (HR)
A38	28324914-1	KNOB (DOOR)(B)
	28323779-1	KNOB (DOOR)(S)
A41	27300750	BUSHING (CORD)
A40	27121776	REAR PANEL (P)
	27121777	REAR PANEL (W)
A46	870147	WASHER NK-011
A49	830440089	TAP-TIGHT SCREW 4TTC+8CBC
A50	831130088	TAP-TIGHT SCREW 3TTW+8B
A51	833430080	TAP-TIGHT SCREW 3TTP+8PBC
A52	834430088	TAP-TIGHT SCREW 3TTS+8BBC(B)
	834230108	TAP-TIGHT SCREW 3TTS+8BBC(S)
A53	834426088	TAP-TIGHT SCREW 2.6TTS+8B
A54	834426068	TAP-TIGHT SCREW 2.6TTS+6B
A55	833420108	TAP-TIGHT SCREW 2TTP+10BB
A56	838430068	TAP-TIGHT SCREW 3TTB+6BBC
A57	27190266	HOLDER
A58	27190524	HOLDER
A62	1N157121	FRONT PANEL AS (B)
	1N158121	FRONT PANEL AS (S)
A63	28135199Y	BADGE
A64	28198797	FACET (7)
A301	28184549	TOP COVER (B)
	28184550	TOP COVER (S)
A303	28141283	CUSHION
A304	28141284	CUSHION
A310	27175294Y	LEG AS
A801	28324854	KNOB (LEV)(B)
	28324855	KNOB (LEV)(S)
A802	28324856	KNOB (BAL)(B)
	28324857	KNOB (BAL)(S)
A901	25050337	NSCT-2P164,AC OUYLET
F901 ⚠	252075	2.5A-SE-EAK,FUSE
T901 ⚠	2300936	NPT-1181P,P.TRANS(P)
⚠	2300937	NPT-1181DG,P.TRANS (W)
S901 ⚠	25065123	NSS-1258P,SLIDE SW (W)
P901 ⚠	253193HIT	AS-CEE,AC CORD
U1	1N157589-1	NAAR-4789-1
U2	1N157590-1	NAAF-4790-1
U3	1N157591-1	NAETC-4791-1
U4	1N157592-1	NAPS-4792-1(P)
	1N157592-1A	NAPS-4792-1A (W)
U5	1N157593-1	NASW-4793-1
U6	1N157594-1	NASW-4794-1
U7	1N157595-1	NASW-4795-1
U8	1N157596-1	NADIS-4796-1
U9	1N157597-1	NAETC-4797-1
W101	2009990300	NSAS-4P0434,PB HEAD WIRE
W401	2009990299	NSAS-4P0434,REC HEAD WIRE
W704	2046212573	FLAT CABLE NCFC6-212573
Z1	244180-1	NDM-171,CASSETTE DECK MECHANISM
Z2	24611487A	BLIND PLATE
Z3	801437	TAPPING SCREW M2.6

NOTE: <B>:Black model
<S>:Silver model
<P>:230V model
<W>:Worldwide model

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

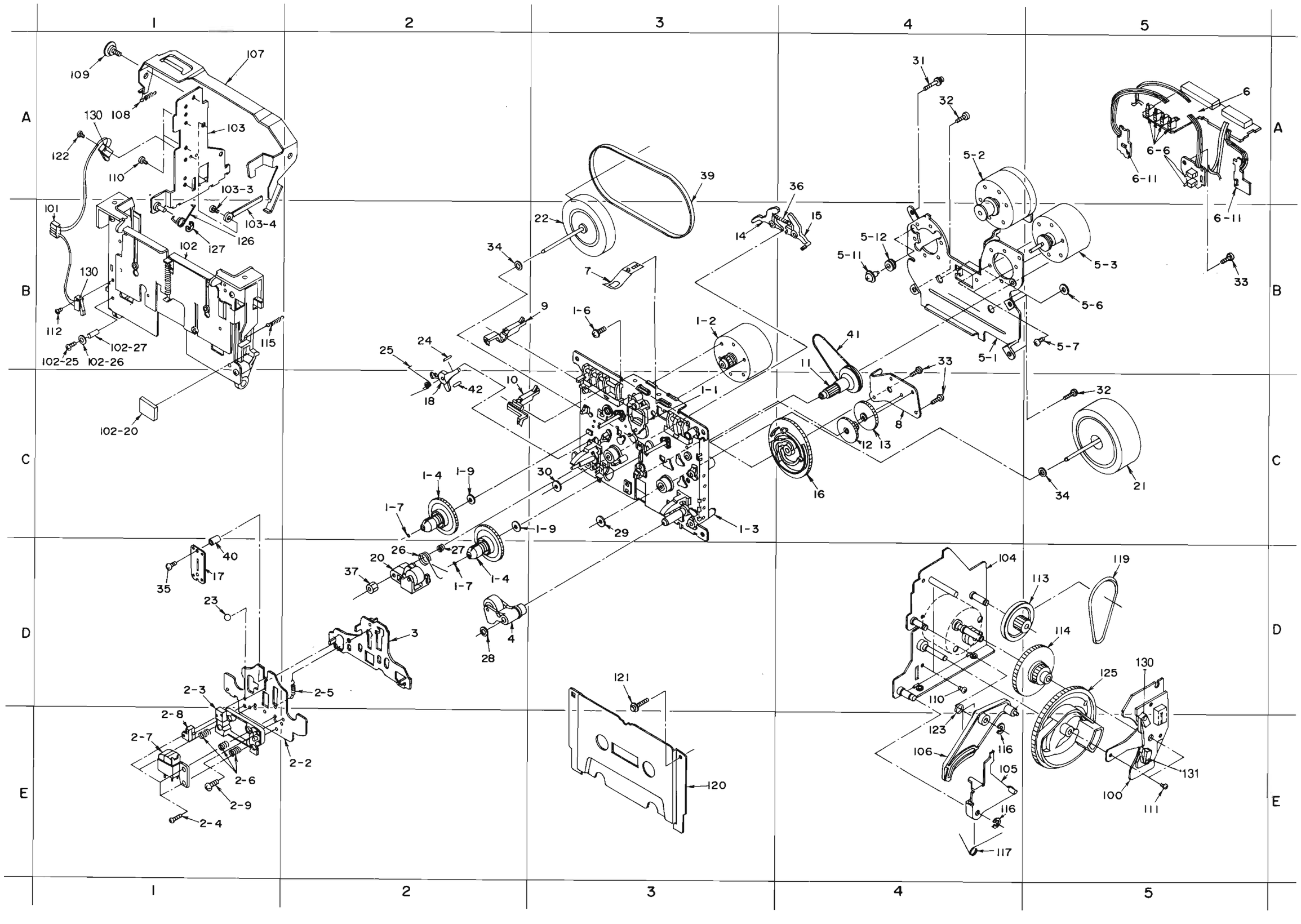
CHASSIS-EXPLODED VIEW



TAPE MECHANISM-PART LIST

REF.NO.	PARTS NO.	DESCRIPTION
1-1	24602571	IDLER AS
1-2	24601275	REEL MOTOR AS
1-4	24602586	REEL BASE
1-6	24609062	PAN HEAD SCREW 2.6 ×10
1-7	24611177	PLASTIC WASHER 1.7 ×3.2×2×.25
1-9	24611175	PLASTIC WASHER 2.1 ×7×.25
2	24611571	PLAY HEAD BLOCK
2-2	24611572	HEAD BASE D
2-3	24611573	HEAD SPACER
2-4	24609063	PAN HEAD SCREW 2.0 ×8
2-5	24605784	SPRING (HEAD BASE)
2-6	24605785	SPRING
2-7	24600119	REC/PB HEAD
2-8	24600120	ERASE HEAD
2-9	833126059	TAPPING SCREW CT 2.6 ×5
3	24611574	P BASE BLOCK
4	24602541	PINCH ROLLER AS
5-2	24601274	MAIN MOTOR
5-3	24601276	MOTOR MMN-6F4RB82
5-6	24609070	WHEEL CATCH SCREW
5-7	24609065	PAN HEAD SCREWSW 2.6 ×3
5-11	24609056	SCREW (MOTOR)
5-12	24611523	CUSHION (MOTOR)
6	24606521	PC BOARD C BLOCK
6-6	24606271	PUSH SWITCH
6-11	24606522	SPI-335-34
7	24605739	SPRING
8	24607131	BRACKET (P.C.B.) H
9	24603365A	LEVER (REC)
10	24603367	LEVER (METAL) L
11	24602574	GEAR (A)
12	24602575	GEAR (B)
13	24602576	GEAR (C)
14	24603393	BRAKE (L)
15	24603394	SLIDE LEVER
16	24602577	CAM GEAR (H)
17	24605787	SPRING
18	24611575	BT ARM
20	24602581	PINCH ROLLER AS (L)
21	24602582	FLY WHEEL AHK (R)
22	24602583	FLY WHEEL TS (L)
23	24611039	STEEL BALL
24	24611576	FELT H
25	24605793	BACK TENTION SPRING
26	24605794	PINCH ROLLER SPRING
27	24605795	HIGHT ADJUST SPRING
28	24611554	WASHER 3.5 ×0.25
29	24611555	OIL SEAL 2.4 ×0.25
30	24611188A	WASHER (OIL SEAL)
31	24609042	S-TIGHT SCREWM2.6 ×25
32	838126080	SCREW 2.6 ×8
33	838126060	SCREW 2.6 ×6
34	24611041	PLASTIC WASHER 2.6 ×0.25
35	833120079	PAN HEDSCREWTT 2.6 ×7ZN
36	24605788	SPRING (BRAKE)
37	24611581	NYLON NUT
39	24602584	MAIN BELT
40	24611580	SPACER
41	24602579	BELT
42	24604101	BT ARM SH
100	24606449	BASE AS (SW)
101	24606497	BASE AS (SW)
102	24611577	P HOLDER BLOCK
102-20	24611529	HOLDER CUSHION
102-25	24611561	PAN HEAD SCREWTT 3.0 ×8
102-26	24611562	WASHER W3.0
102-27	24611563	COLLAR 4 ×3
103	24611578	P HOLDER BLOCK
103-4	24611323	LUG
104	24611491	PLATE AS (HOLDER)
105	24611579	P HOLDER BLOCK
106	24603389	LEVER AS (PLAY)
107	24603399	EJECT LEVER AH
108	24605758	SPEING (EJECT)
109	24609048	SCREW
110	833126049	TAP-TIGHT SCREW 2.6TTP+4C
111	833120039	PAN HEAD SCREWTT 2.0 ×3ZN
112	838120130	WAVE SCREW 2 ×13
113	24602535	GEAR (A)
114	24602536	GEAR (B)
115	24605769	SPRING (LEVER)
116	893030	E WASHER 3
117	24605760	SPRING (DOOR)
119	24602538	BELT
120	24611527	BACK PLATE (CASSETTE)
121	24609049	TAP-TIGHT SCREW
122	24609058	PAN HEAD SCREWTT 2.0 ×8ZN
123	24605761	SPRING (SLIDER)
125	24602585	CAM GEAR
126	24605796	EJECT SPRING
127	893025	E WASHER 2.5
130	24606454	SPPB22,SWITCH
131	24606453	SPPB21,SWITCH
	2009990300	NSAS-4P0434,PB HEAD WIRE
	2009990299	NSAS-6P0433,REC HEAD WIRE

TAPE MECHANISM-EXPLODED VIEW



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.

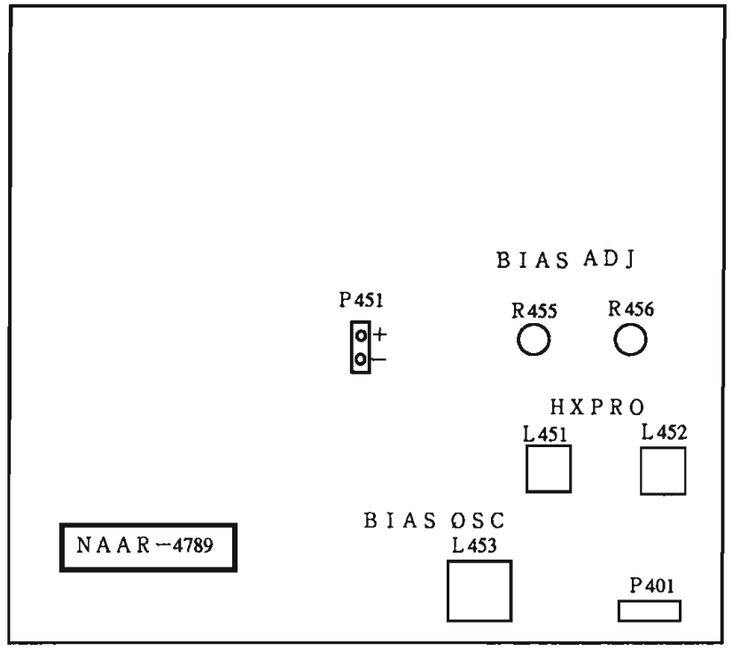
TEST EQUIPMENT/TOOLS REQUIRED:

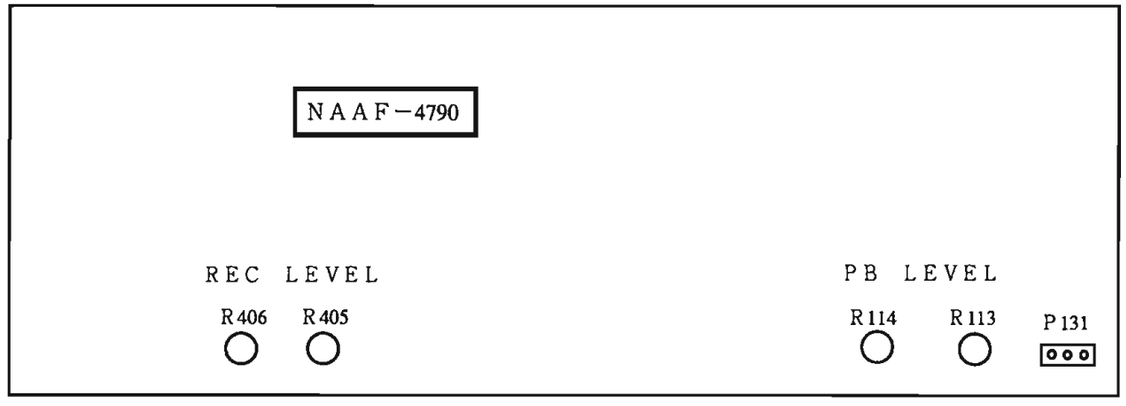
Audio oscillator
Digital frequency counter
Oscilloscope
Attenuator
AC voltmeter
Non-magnetic screw driver
Test tapes
TCC-153 : 10 KHz, – 5dB
MTT-111 : 3 kHz, – 0dB
MTT-150 : Dolby level calibration 400Hz, tone 200nWb/m

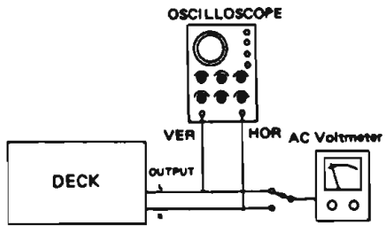
	Item	Connection of instrument	Line input	Test tape	Mode	Output indicator	Adjustment point	Adjust	Remaks
1	Tape speed	Frequency counter to LINE output terminal		MTT-111	PB	Frequency counter	Semi-fixed on the moter	3,000 to 3,010Hz	
2	Head azimuth	AC voltmeter and oscilloscope to LINE output terminal		TCC-153	PB	AC voltmeter	Haed azimuth screw	Maximum and same phase at channels L and R	fig- 1
3	Playback level	AC voltmeter to terminals P-131		MTT-150	PB	AC voltmeter	R-113(Ch.L) R1-14(Ch.R)	300mV	
4	OSC Block	Frequency counter to P401(E-head), read loose coupling		METAL TAPE	REC	Frequency counter	L-453	107KHz	
5	HX-PRO	DC voltmeter to terminals P-451		METAL TAPE	REC	DC voltmeter	L-451(Ch.L) L-452(Ch.R)	Mnimum	R-455 R-456 Maximum
6	Bias current	AC voltmeter to LINE output terminal	1 KHz, –20dB and 12kHz, –20dB	NEW XL-II C-90	REC/PB	AC voltmeter	R-455(Ch.L) R-456(Ch.R)	Same level at REC/PB	Input VR maximum
7	Record level	fig- 2	1 KHz		REC	AC voltmeter	Attenutor or AF OSC output	350mV	Input VR maximum
					REC/PB	AC voltmeter	R-405(Ch.L) R-406(Ch.R)	Same level at REC/PB	

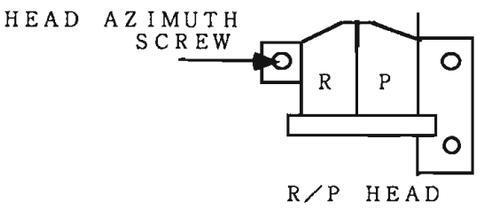
Blank tape
NORMAL.....NEW UD- 1 C-90
HIGH.....XL-II C-90
METAL.....XS C-60
PLAY torque.....30～70 g／cm
FF.REW torque...90～180 g／cm
Back tention..... 6～12 g／cm

ADJUSTMENT POINT









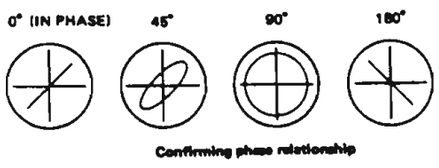


fig-1

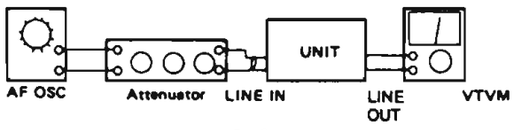


fig-2

PRINTED CIRCUIT BOARD – PARTS LIST

NAAR-4789-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Ics	
Q451	222959	μPC1297CA
Q501	22240040	NJM-2902N
Q502	22240313	BA6138
Q701	22240723	HD404316A06S
Q703	22240745	HD404316A13S
Q805	22240239	TA-7291S
Q807,Q809	22240239	TA-7291S
Q905	222780055	78M05HF
Q906	222780105	78M10
	Transistors	
Q301,Q302	2211705 or	2SD655-E or
	2211706	2SD655-F
Q303	2213354 or	2SA933S-R or
	2213355	2SA933S-S
Q304	2213284 or	2SC1740S-R or
	2213285	2SC1740S-S
Q452,Q453	2211544	2SC1959-Y
Q454	2212853 or	2SB1068-K or
	2212855	2SB1068-U
Q455-Q457	221281	DTC114YS
Q704,Q705	2211705 or	2SD655-E or
	2211706	2SD655-F
Q707	221281	DTC114YS
Q708	2212600	DTA124ES
Q801-Q804	2213284 or	2SC1740S-R or
	2213285	2SC1740S-S
Q806	221281	DTC114YS
Q808	2211705 or	2SD655-E or
	2211706	2SD655-F
Q810	221281	DTC114YS
	Diodes	
D501-D503	223222	WG713A
D504	224450433	MTZ4.3C
D706	223205 or	1SS270A or
	223222	WG713A
D707	224450562	MTZ5.6B
D708	223205 or	1SS270A or
	223222	WG713A
D801	224450752	MTZ7.5B
D802	224450433	MTZ4.3C
D803	224450913	MTZ9.1C
D805	224450752	MTZ7.5B
	Coils	
L451,L452	231100	NCH-4147
L453	231212	NLO-2057
X701	3010150	CST4.00MGW
X702	3010150	CST4.00MGW
	Capacitors	
C301,C302	391980477	4.7 μF50V,ELECT.
C451	391941007	10 μF16V,ELECT.
C457,C458	370131014	100PF 100V,APS
C459,C460	370134714	470PF 100V,APS
C466	391980477	4.7 μF50V,ELECT.
C468	391944707	47 μF16V,ELECT.
C469	391942217	220 μF16V,ELECT.
C473	370131234	0.012 μF100V,APS
C474	391941007	10 μF16V,ELECT.
C475	391980477	4.7 μF50V,ELECT.
C504	391980227	2.2 μF50V,ELECT.
C511,C512	391980477	4.7 μF50V,ELECT.
C513,C514	391980477	4.7 μF50V,ELECT.
C703	391941007	10 μF16V,ELECT.
C705	391980227	2.2 μF50V,ELECT.
C803	391941017	100 μF16V,ELECT
C804	352980476	4.7 μF50V,NP.
C805	391941017	100 μF16V,ELECT
C806	352980476	4.7 μF50V,NP.
C807	391941017	100 μF16V,ELECT
C808	352980476	4.7 μF50V,NP.
C920	391941007	10 μF16V,ELECT.
C921	391941017	100 μF16V,ELECT
C922	391944707	47 μF16V,ELECT.
C923	391941007	10 μF16V,ELECT.
C925,C926	393144717	470 μF16V,ELECT.
	Resistors	
R455,R456	5210263	N06HR20KBC
R465	443521004	RS1/2WBJ10Ω
R472	443524704	RS1/2WBJ47Ω
R702	49163392404	3.9KΩ ×4,1/10W
R721,R722	49163392404	3.9KΩ ×4,1/10W
R734	49163392404	3.9KΩ ×4,1/10W
R811	443522704	RS1/2WBJ27Ω
R813	453530224	RNU1/2WCJ2.2Ω
R817	453530224	RNU1/2WCJ2.2Ω
	Plug,socket	
P201	25045354	NPJ-4PDBL200
P401	25055150	NPLG-6P134
P451	25055132	NPLG-2P116
PL701	25050527	NSCT-5P350
PL702	25050525	NSCT-3P348
PL703	25050527	NSCT-5P350
P704	25050961	NSCT-21P748
P705	25045330	NPJ-2PDBL184
P803	2000649	NSAS-10P605
P804	25055148	NPLG-4P132
PL901,PL902	25050529	NSCT-7P352

NAAF-4790-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Ics	
Q101	222956	NJM-2068D-D
Q131	22240631	HA12142NT-01
Q201	22240631	HA12142NT-01
Q252	222840661TOS	4066B
Q401	22240267	CXA1198AP
	Transistors	
Q103,Q104	2213284 or	2SC1740S-R or
	2213285	2SC1740S-S
Q203,Q204	221299	DTC114TS
Q251	221281	DTC114YS
Q403,Q404	2213284 or	2SC1740S-R or
	2213285	2SC1740S-S
Q405-Q407	221281	DTC114YS
	Diodes	
D401-D405	223205 or	1SS270A or
	223163	1SS133
	Coils	
L101,L102	231086	NCH-2134
L201,L202	233436	NMC-6081
L401,L402	231086	NCH-2134
	Capacitors	
C105,C106	391942217	220 μF16V,ELECT.
C131,C132	391980227	2.2 μF50V,ELECT.
C137,C138	391941007	10 μF16V,ELECT.
C201,C202	391980227	2.2 μF50V,ELECT.
C209,C210	391941007	10 μF16V,ELECT.
C251	391980107	1 μF50V,ELECT.
C253,C254	393141027S	1000 μF16V,ELECT.
C401-C404	391980227	2.2 μF50V,ELECT.
C405,C406	391980477	4.7 μF50V,ELECT.
	Resistors	
R113,R114	5210242	N06HR22KBE
R405,R406	5210242	N06HR22KBE
	Plug,socket	
P101	25055148	NPLG-4P132
P131	25055133	NPLG-3P117
P202A	25055185	NPLG-4P169
P301,P302	25055508	NPLG-10P483

NAETC-4791-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
R203	5104326	R09PGLC250KMN50KA

NAPS-4792-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q901,Q902	2201275	2SB772-Q
Q903	222465	NJM-4558D
Q904	2213355	2SA933S-S
	Diodes	
⚠ D901	22380022F	RBV402
⚠ D902-D905	22380035	GP104003E
D906,D907	223205 or	1SS270A or
	223222	WG713A
D908	224450562	MTZ5.6B
D909	224452204	MTZ22D
D910	224450683	MTZ6.8C
	Capacitors	
C903,C904	393142227S	2200 μF16V,ELECT.
C905	391921017	100 μF6.3V,ELECT.
C906,C907	391941007	10 μF16V,ELECT.
C908,C909	391961017	100 μF35V,ELECT.
C910,C910	391980477	4.7 μF50V,ELECT.
C912	391942207	22 μF16V,ELECT.
C913	391944727S	4700 μF16V,ELECT.
	Resistors	
⚠ R901,R902	453530334	RNU1/2WCJ3.3Ω
⚠ R911	453530104	RNU1/2WCJ1Ω
	Fuse holder	
F901A	25050065	YSH403T

NASW-4793-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	LED	
D701	225291D	SEL4910D-D
D702	225290	SEL4110R
	Switches	
S201	25065364	NSS-12138
S202	25065386	NSS-13147
S701-S705	25035652	NPS-111-S604
	Socket	
P202	2000665	NSAS-8P621

NASW-4794-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S706-S710	25035652	NPS-111-S604

NASW-4795-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	LED	
D703	225291D	SEL4910D-D
D704	225290	SEL4110R
D705	225291D	SEL4910D-D
	Switches	
S711,S712	25035652	NPS-111-S604

NADIS-4796-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q702	212122	BJ183GK
D709	224450433	MTZ4.3C
P704A	25050927 or	NSCT-21P714 or
	25050885	NSCT-21P680

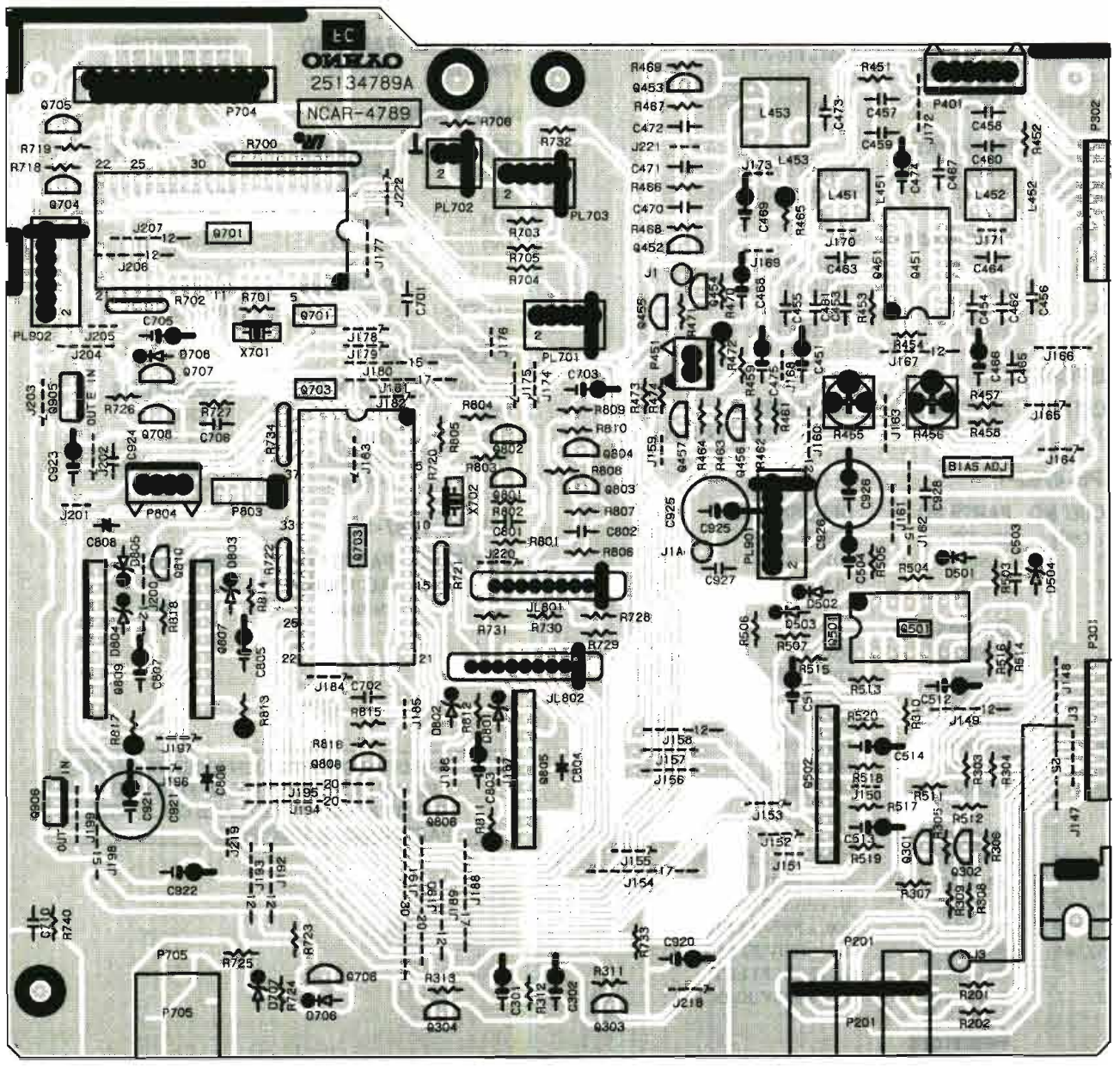
NAETC-4797-1

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	AC Outlet	
A901	25050684	NSCT-2P488

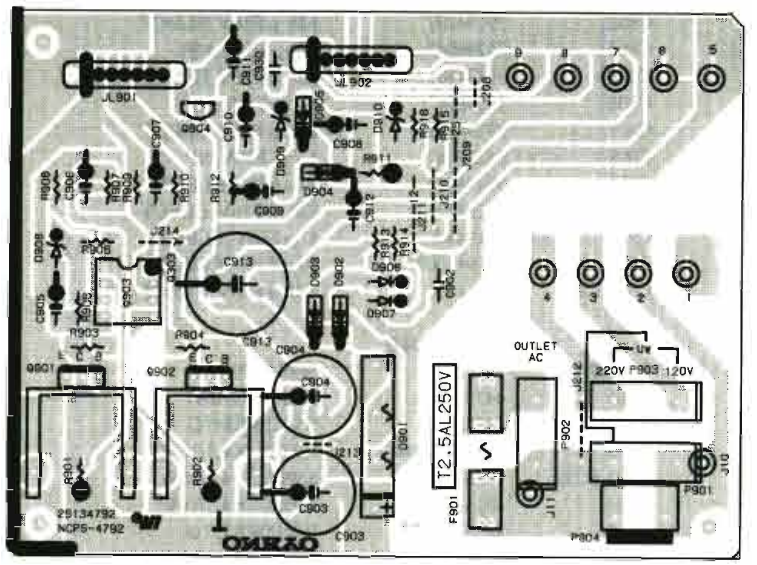
NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

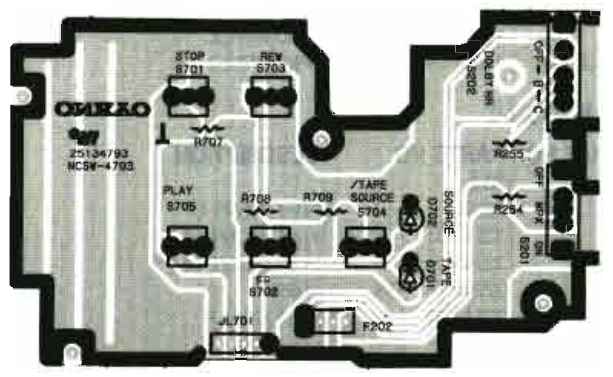
NCAR-4789



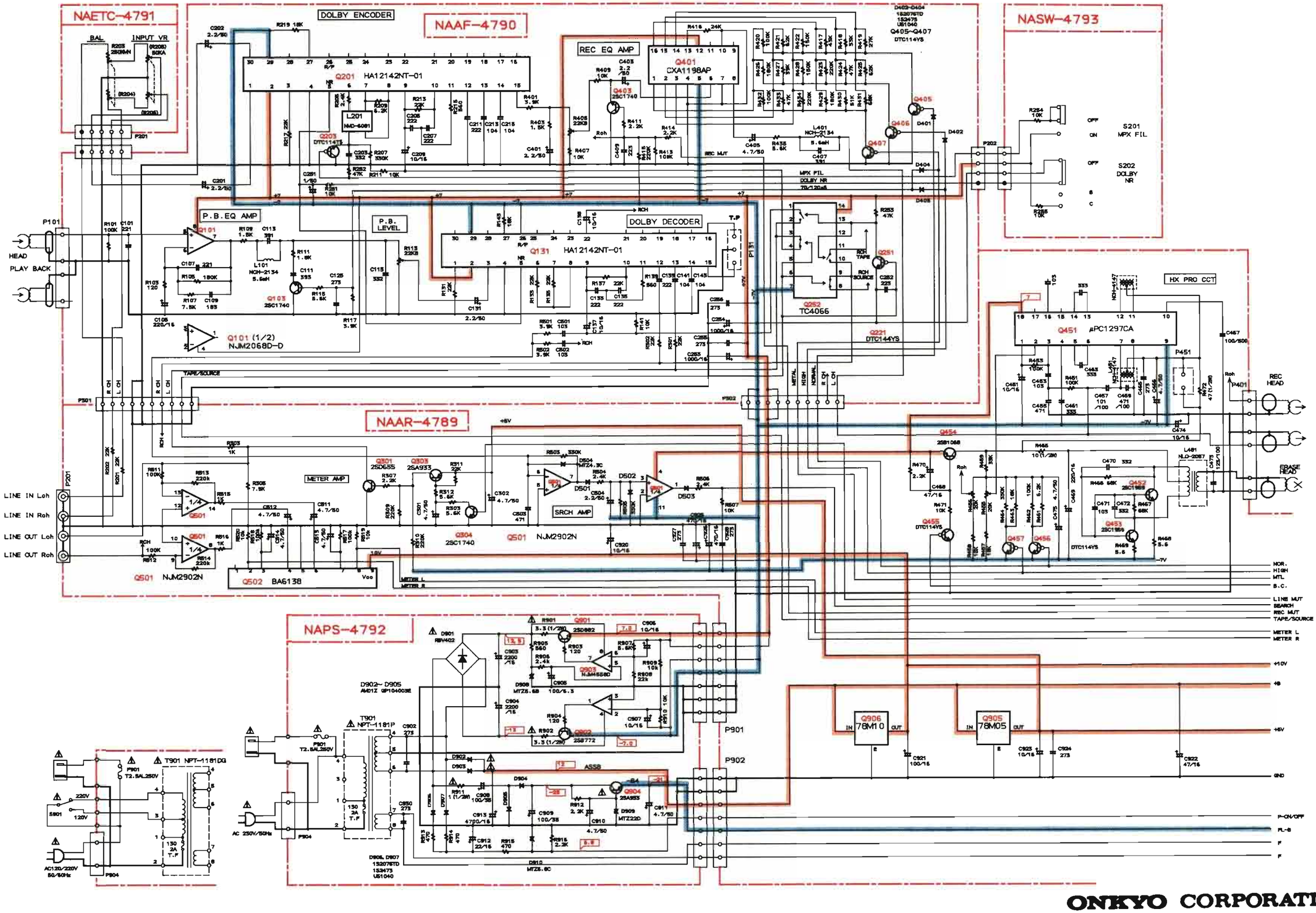
NCPS-4792



NCSW-4793



SCHEMATIC DIAGRAM 1/2



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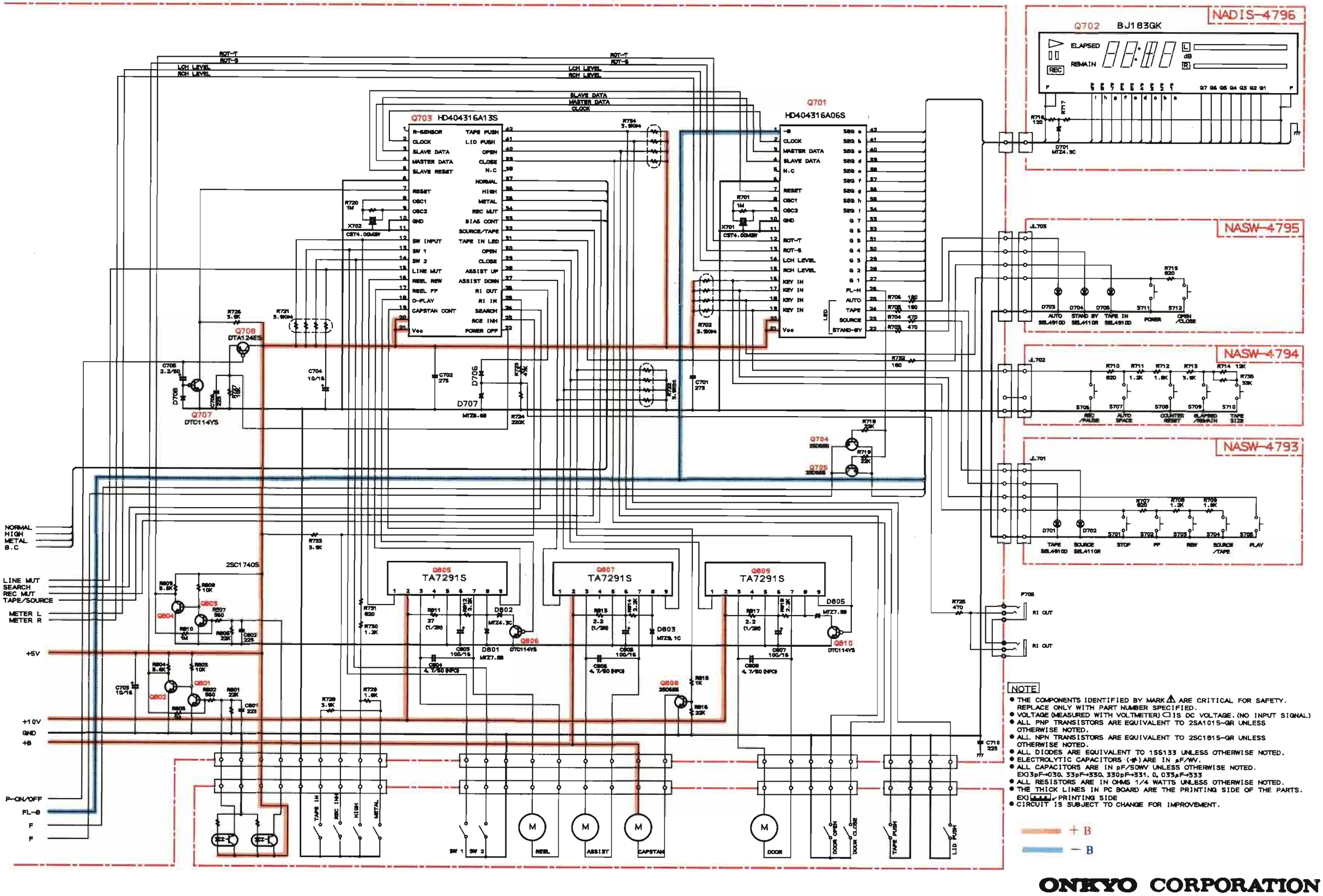
SCHEMATIC DIAGRAM 2/2



NOTE

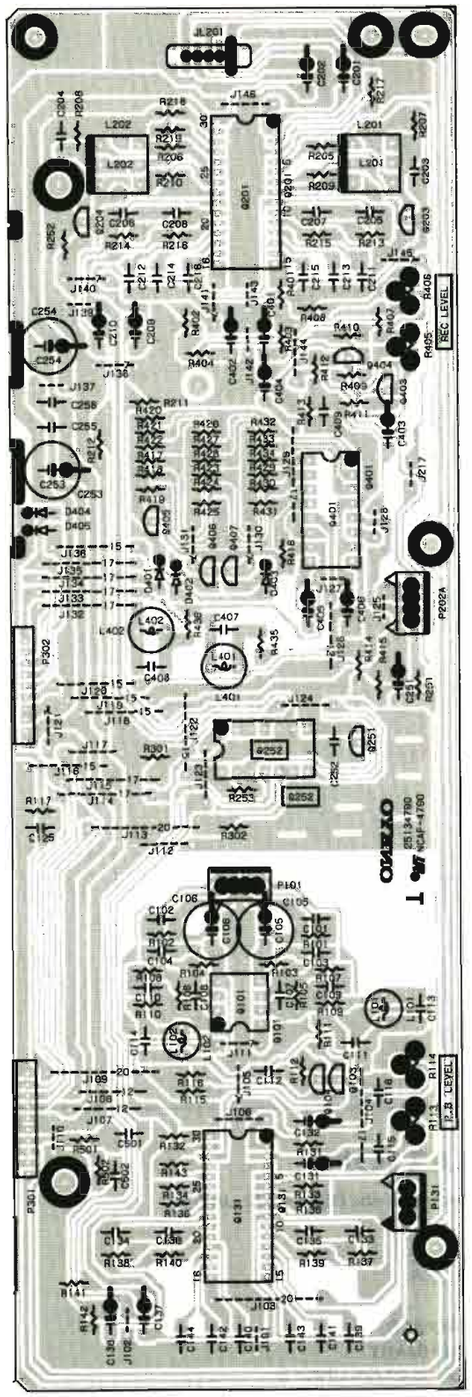
- THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH VOLTMETER) ☐ IS DC VOLTAGE. (NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (-μ) ARE IN μF/WV.
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED. EX) 3pF→030, 33pF→330, 330pF→331, 0.033μF→333
- ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
- THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS. EX) ▭ PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

+B

−B

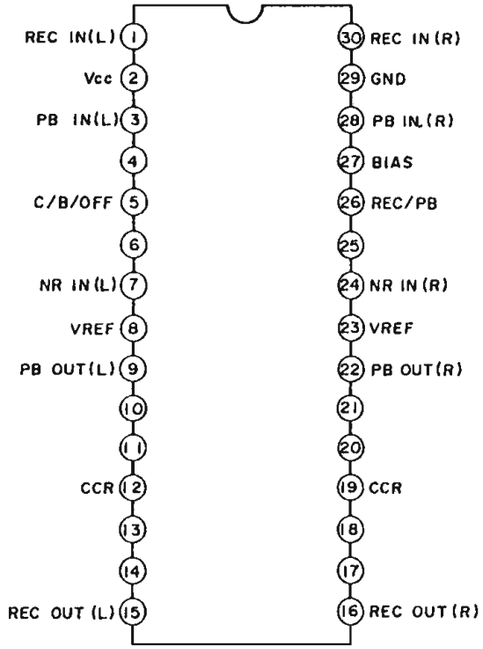
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

NCAF-4790

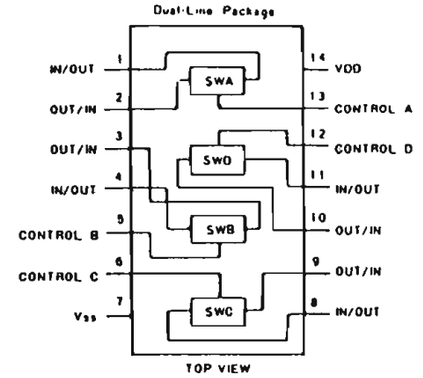


IC BLOCK DIAGRAM

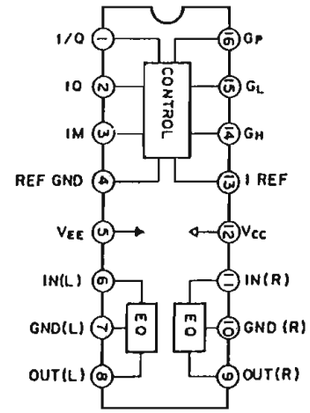
HA12142NT (DOLBY NR)



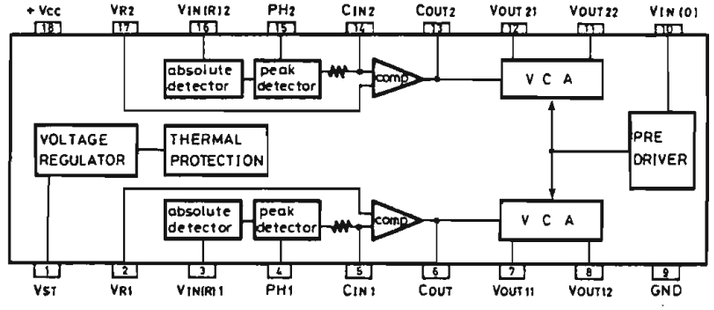
4066 (ANALOG SW)



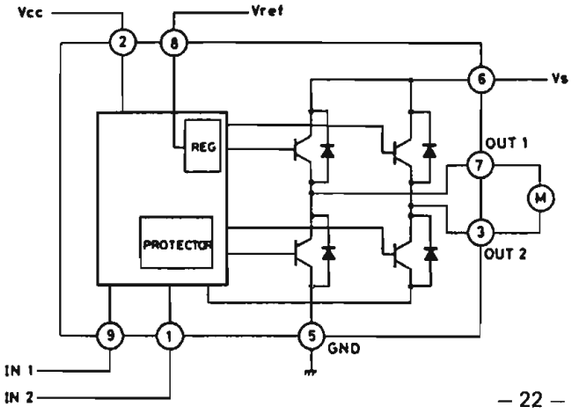
CXA1198AP (REC EQ)



μPC1297CA (HX PRO)



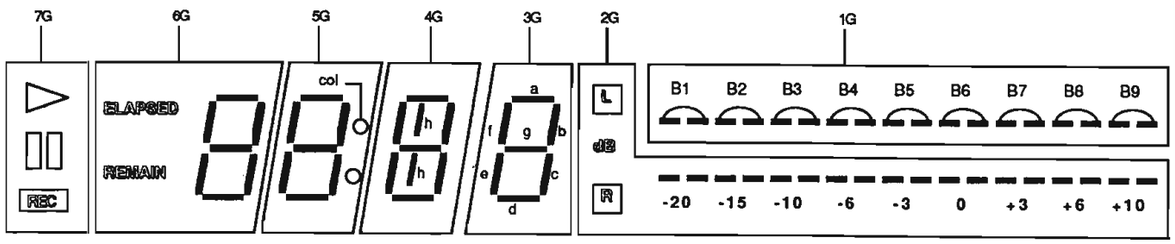
TA7291S (MOTOR DRIVE)



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

BJ183GK



PIN CONNECTION

PIN NO.	44 43	42 41	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 09	08 07	06 05	04 03	02 01
CONNECTION	F2	F2	NP	NP	P9	P8	P7	P6	P5	P4	P3	P2	P1	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	7G	6G	5G	4G	3G	P10	2G	1G	NP	NP	F1	F1

NOTE 1) F1, F2 --- Filament
2) NP ------ No pin
3) NC ------ No connection
4) DL ------ Datum Line
5) 1G~7G --- Grid

ANODE CONNECTION

	7G	6G	5G	4G	3G	2G	1G
P1	▷	a	a	a	a	B1	B1
P2	▯▯	b	b	b	b	B2	B2
P3	REC	c	c	c	c	B3	B3
P4	–	d	d	d	d	B4	B4
P5	–	e	e	e	e	B5	B5
P6	–	f	f	f	f	B6	B6
P7	–	g	g	g	g	B7	B7
P8	–	ELAPSED	col	h	–	B8	B8
P9	–	REMAIN	–	–	–	B9	B9
P10	–	–	–	–	–	L R dB -20 ~ +10	–

PACKING PARTS LIST

PART NO.	DESCRIPTION
29052649	Carton box [B]
29052650	Carton box [S]
29091642A	Pad(L)
29091643A	Pad(R)
29100037A	650×500 Poly bag
Accessary bag ass'y	
29341859	Instruction manual [P]
29341860	Instruction manual [V]
29341861	Instruction manual [W]
29100097	320×250 Poly bag
25055040	CV-K-2, Conversion plug [W]

NOTE [P] : Only 230V model
[W] : Only worldwide model
[V] : Only Germany model
[B] : Black model
[S] : Silver model

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