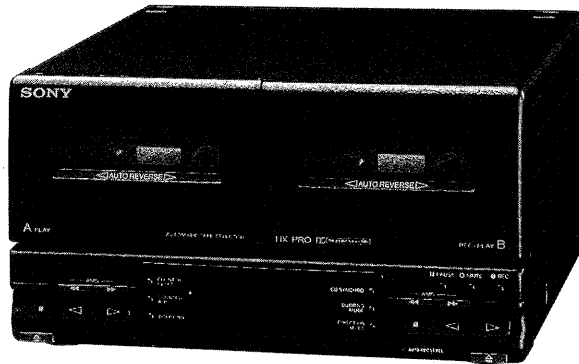


TC-H4800

SERVICE MANUAL

*AEP Model
E Model
Australian Model
Tourist Model*



This unit is cassette deck for the MHC-4800/
FH-E8X component system.

Model Name Using Similar Mechanism	TC-H6800	
Tape Transport Mechanism Type	DECK A	TC-190RA12A
	DECK B	TC-190RB12A

SPECIFICATIONS

Cassette Deck

Recording system 4-track 2-channel stereo
Frequency response (DOLBY NR OFF)
40 — 13,000 Hz (± 3 dB),
using TYPE I cassette
(Sony HF-S)
40 — 14,000 Hz (± 3 dB),
using TYPE II cassette
(Sony UX-S)
40 — 15,000 Hz (± 3 dB),
using TYPE IV cassette
(Sony METAL-S)
Wow and flutter 0.1% WRMS $\pm 0.3\%$ (DIN)

Design and specifications subject to change
without notice.

Dolby noise reduction manufactured under license from
Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol $\square\square$ are trademarks of
Dolby Laboratories Licensing Corporation.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

STEREO CASSETTE DECK
SONY[®]

TABLE OF CONTENTS

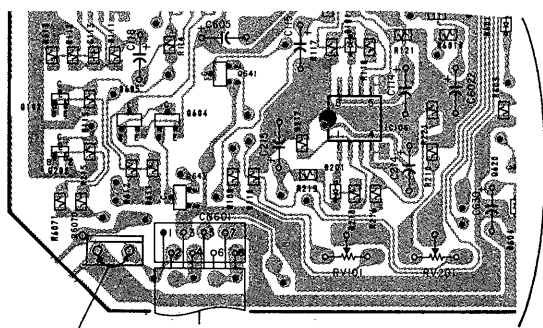
<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
1. GENERAL	3	6. EXPLODED VIEWS		
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SAFETY-RELATED COMPONENT WARNING!!

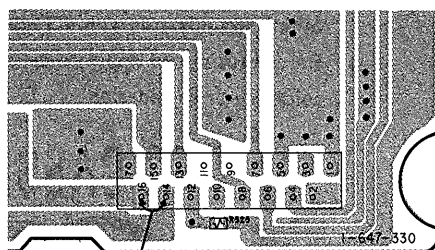
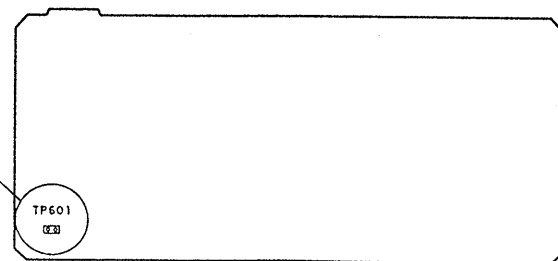
COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

CAUTION WHEN REPAIRING

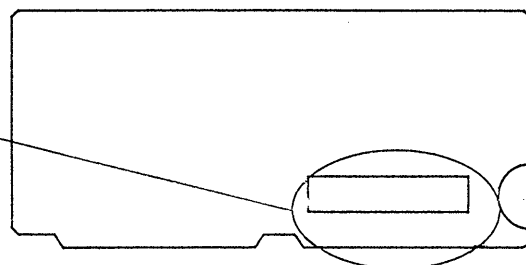
This unit is connected to power amplifier TA-H4800, which supplies normally the power to this unit. However, when repairing this unit only, connector board after shorting the TP601 on the main board as shown in the following diagrams :



【TC MAIN BOARD】 (SOLDERED SIDE)



【CONNECTOR BOARD】 (SOLDERED SIDE)



AC18V CNJ401 SYSTEM CONTROL II

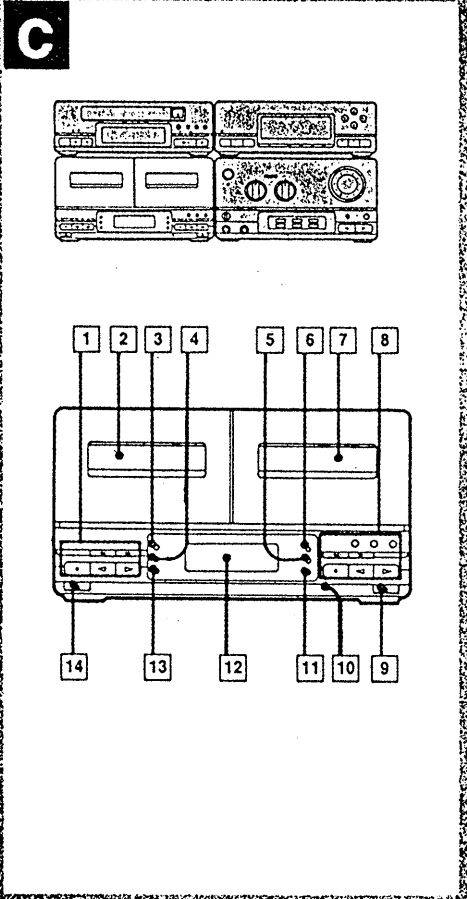
SECTION 1

GENERAL

This section is extracted from instruction manual.

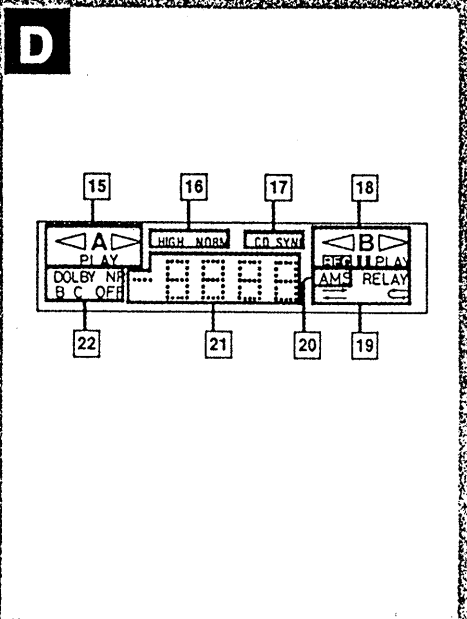
Parts Identification

Cassette Deck Section C



- 1 Tape operation buttons (for Deck A)
 - ◀▶▶▶ AMS : Fast winding buttons
 - : Stop button
 - ▷ : Forward play button
 - ◁ : Reverse play button
- 2 Cassette holder (Deck A)
- 3 COUNTER RESET button (62)
- 4 COUNTER A/B selector (62)
- 5 DUBBING MODE button (72)
- 6 CD SYNCHRO (CD synchronized recording) button and indicator (80)
- 7 Cassette holder (Deck B)
- 8 Tape operation buttons (for Deck B)
 - || PAUSE button
 - MUTE button
 - REC button
 - ◀▶▶▶ AMS : Fast winding buttons
 - : Stop button
 - ▷ : Forward play button
 - ◁ : Reverse play button
- 9 △ Eject button (Deck B)
- 10 AUTO REC LEVEL (Automatic Recording Level) indicator (68, 80)
- 11 DIRECTION MODE button (62, 66)
- 12 Display window
- 13 DOLBY NR (Dolby Noise Reduction) selection button (64)
- 14 △ Eject button (Deck A)

Display window D

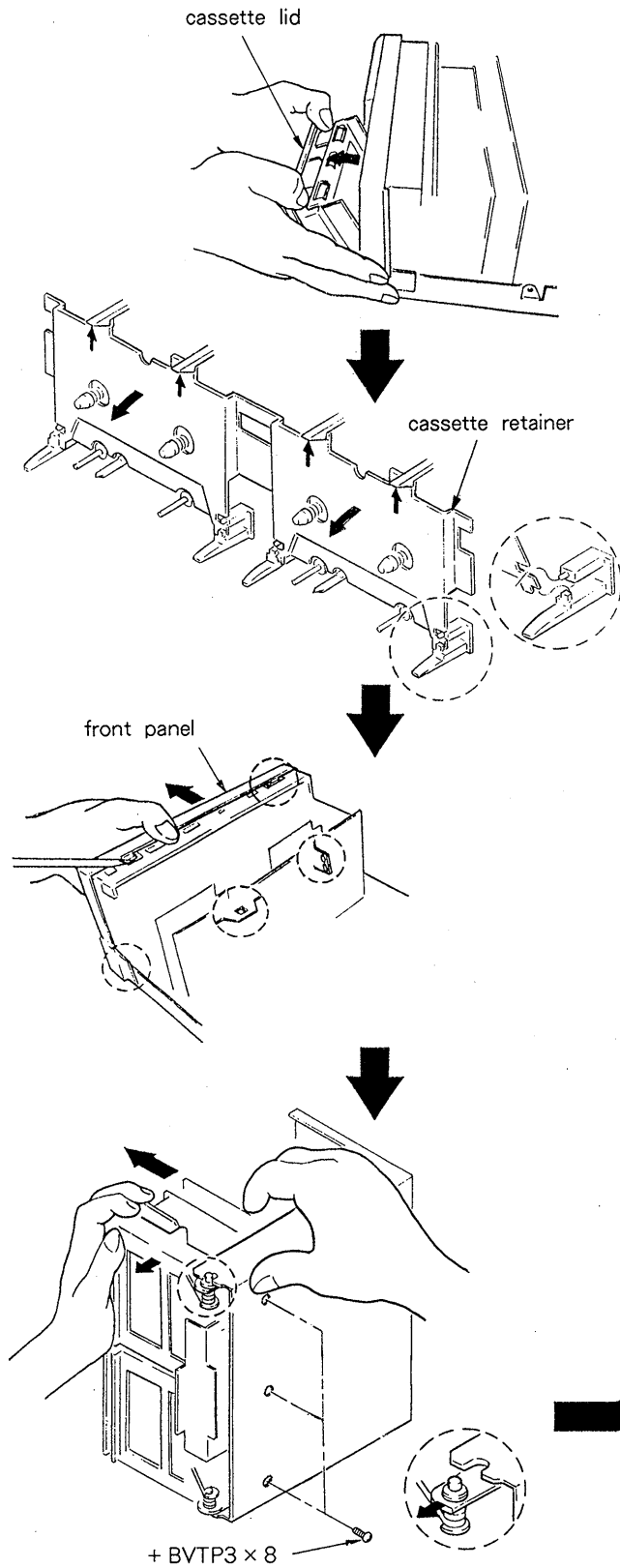


- 15 Deck A status display
- 16 Dubbing mode display
- 17 CD SYNCHRO display
- 18 Deck B status display
- 19 Tape direction mode display
- 20 AMS display
- 21 Counter display
- 22 DOLBY NR display

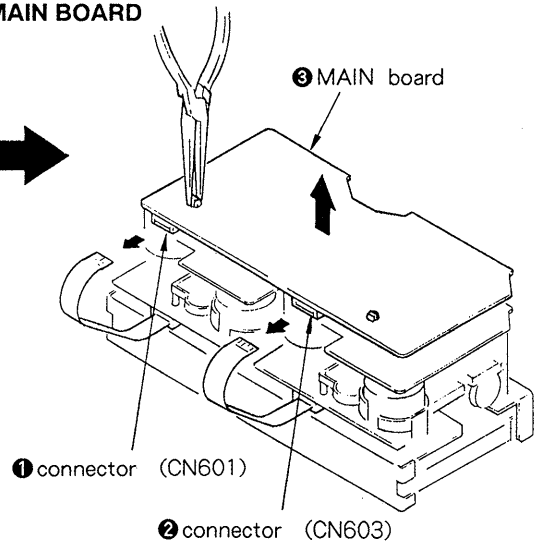
SECTION 2 DISASSEMBLY

NOTE: Follow the disassembly procedure in the numerical order given.

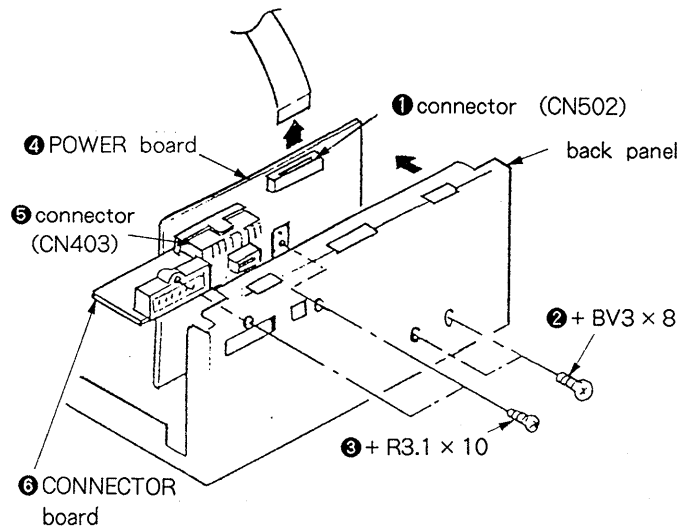
• FRONT PANEL



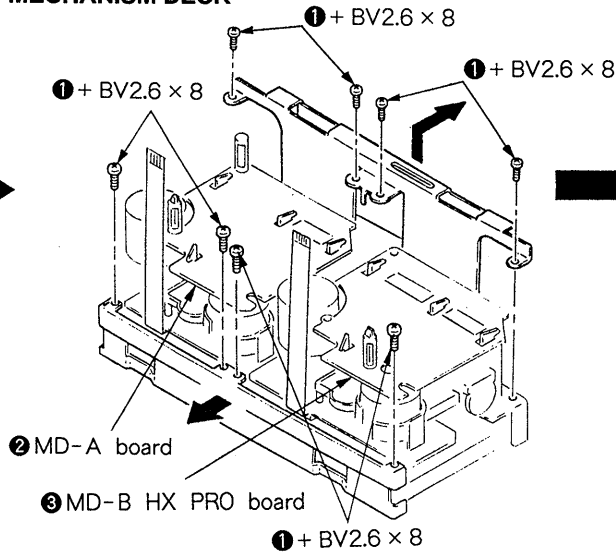
• MAIN BOARD



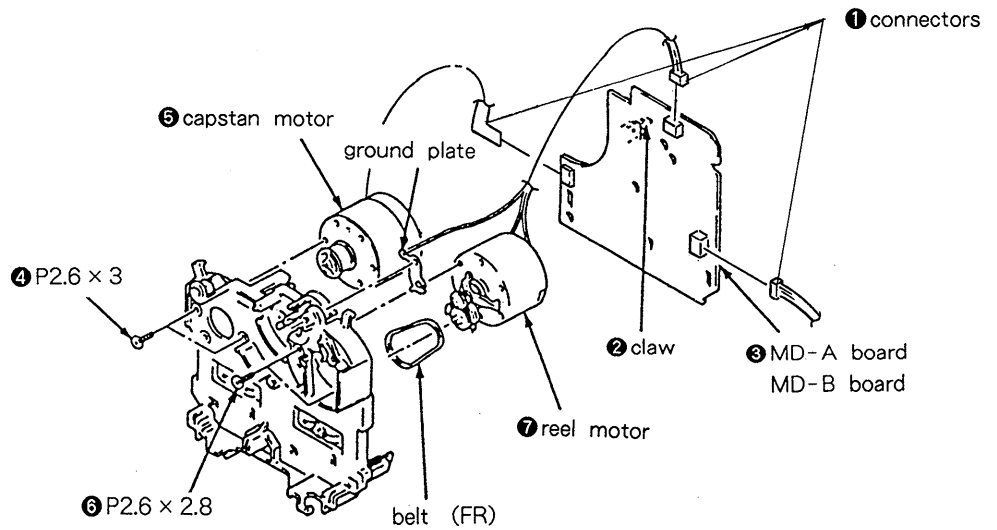
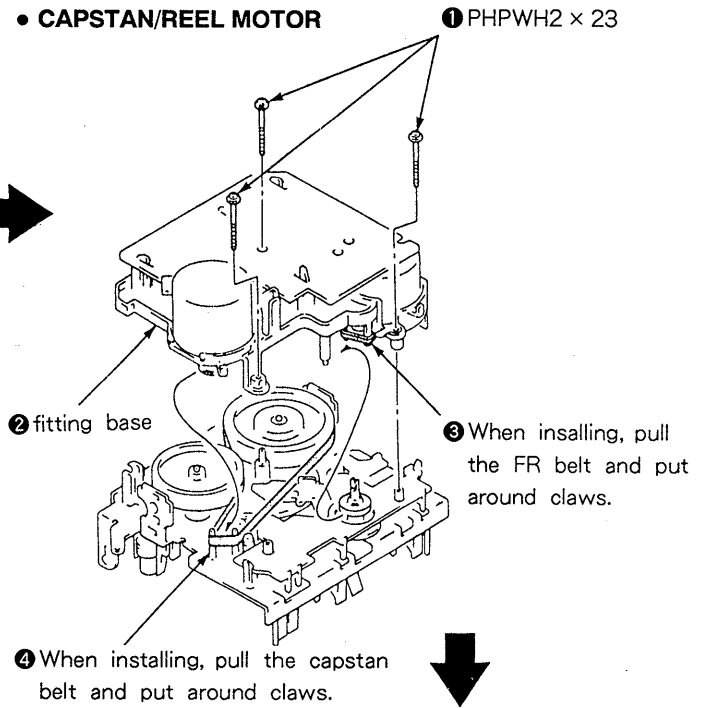
• CONNECTOR/POWER BOARD



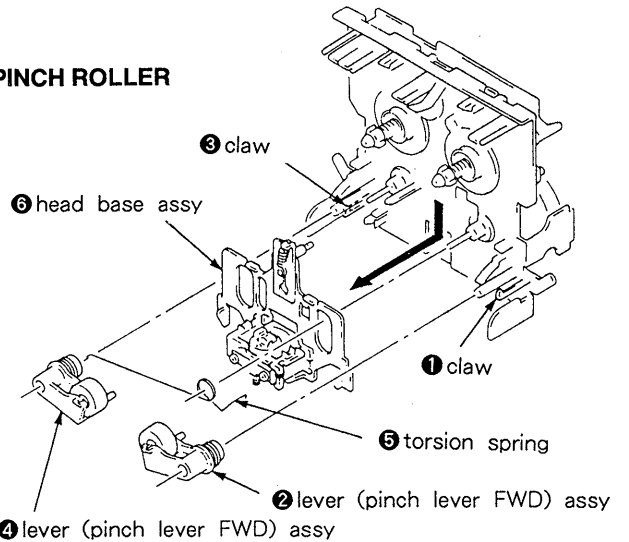
• MECHANISM DECK



• CAPSTAN/REEL MOTOR



• HARD, PINCH ROLLER



SECTION 3 MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab :

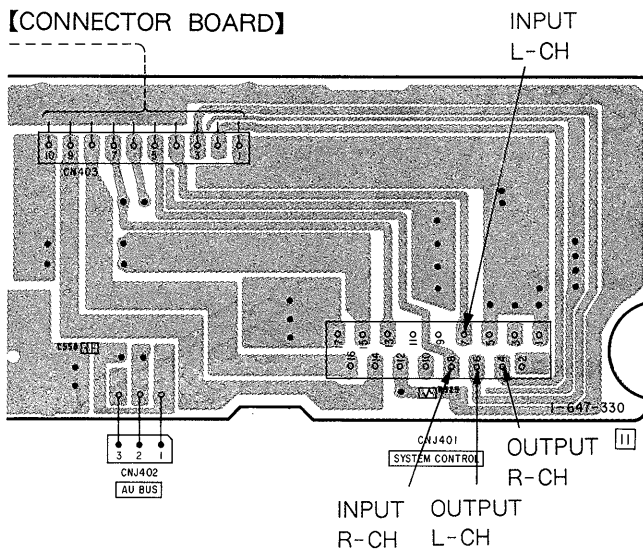
record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
2. Demagnetize the record/playback head with a head demagnetizer.
(Head demagnetizer do not approach for the erase head.)
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 65g · cm (0.42 to 0.90 oz · inch)
Forward back tension	CQ-102C	1 to 6g · cm (0.014 to 0.08 oz · inch)
Reverse	CQ-102RC	30 to 65g · cm (0.42 to 0.90 oz · inch)
Reverse back tension	CQ-102RC	1 to 6g · cm (0.014 to 0.08 oz · inch)
Forward, Reverse	CQ-201B	70 to 120g · CM (0.98 to 1.67 oz · inch)

LINE IN/OUT Terminal (CNJ401)

【CONNECTOR BOARD】



SECTION 4 ELECTRICAL ADJUSTMENTS

PRECAUTION

1. The adjustment should be performed in the publication.
(Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
 - Switch position
DOLBY NR switch : OFF

Test Tape

Tape	Contents	Use
P-4-A100	10kHz, -10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

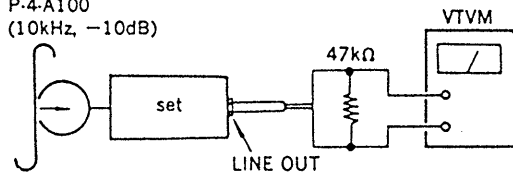
Record/Playback Head Azimuth Adjustment

DECK A **DECK B**

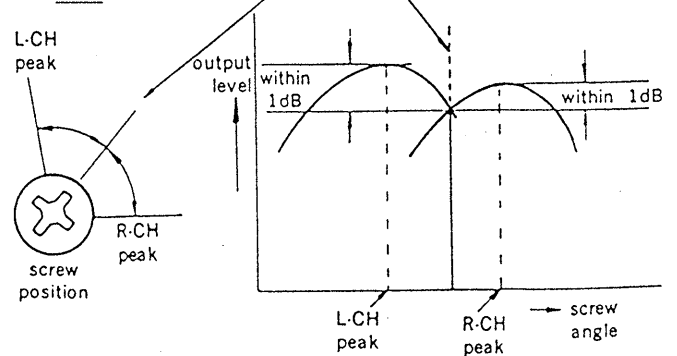
Procedure :

1. Forward Playback Mode

test tape
P-4-A100
(10kHz, -10dB)

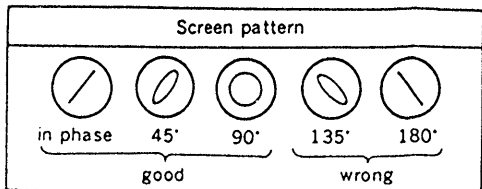
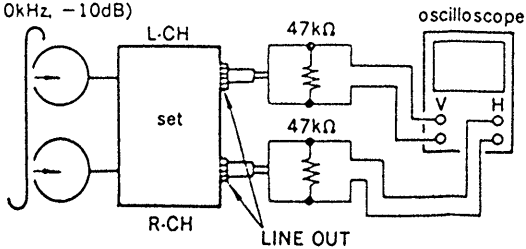


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



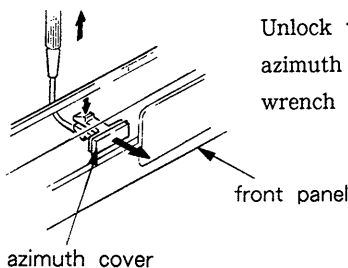
3. Playback Mode

test tape
P-4-A100
(10kHz, -10dB)

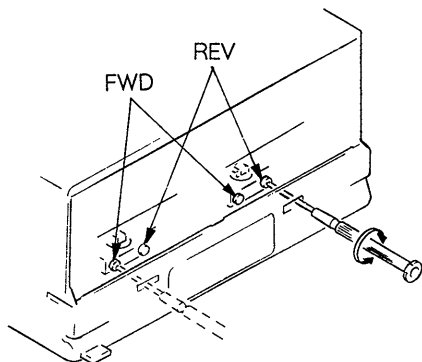


4. Change the reverse playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location : - record/playback head -



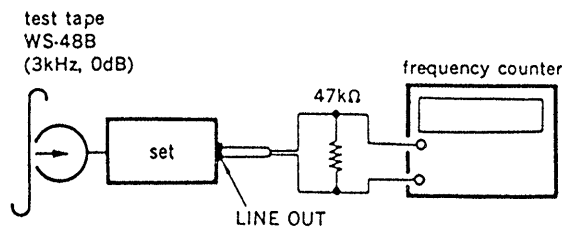
- Removing the azimuth cover. Unlock the stoppers of the azimuth cover using a L-shaped wrench in order to adjust.



Tape Speed Adjustment DECK A DECK B

Procedure :

-Forward Playback Mode-



Perform high speed adjustment before normal speed adjustment.

(High speed adjustment)

1. Short TP601 (main board) when the power is OFF.
2. Turn on the power and put the deck A into the FWD mode.
3. Adjust RV72A (H) of the deck A so that a reading of the frequency counter meets the adjustment value.
4. Put the deck A into the STOP mode and remove the resistor of 150 Ω
5. Adjust the deck B performing items 2 through 5 as deck A.
6. After the adjustment is completed, remove the short of TP601.

(Normal speed adjustment)

1. Put the set into the FWD playback mode.
2. At this time, adjust RV71A (L) of the deck A and RV71B (L) of the deck B so that a reading of the frequency counter meets the adjustment value.

Adjustment Limits :

Speed	Frequency Counter Reading
High	6,000 ± 30Hz
Normal	3,000 ± 15Hz

Frequency difference between the beginning and the end of the tape should be within 3%.

Frequency difference between deck A and deck B the beginning of the tape should be within 1.0%.

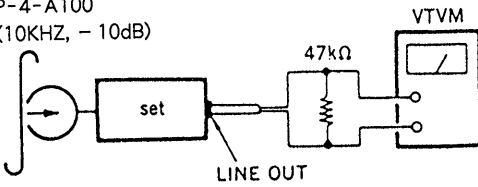
Adjustment Location : MD-A and B board

Playback Level Adjustment **DECK A** **DECK B**

Procedure :

—Forward Playback Mode—

test tape
P-4-A100
(10KHZ, -10dB)



Adjust deck A : RV11A (L-CH), RV21A R-CH) and deck B : RV11B (L-CH), RV21B (R-CH) so that the VTVM reading becomes the adjustment limits below.

Adjustment Limits :

LINE OUT level : $-7.5 \pm 0.5\text{dB}$ (0.31 to 0.34V)

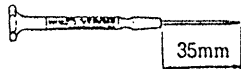
Level Difference between Channels : within 0.5dB

Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

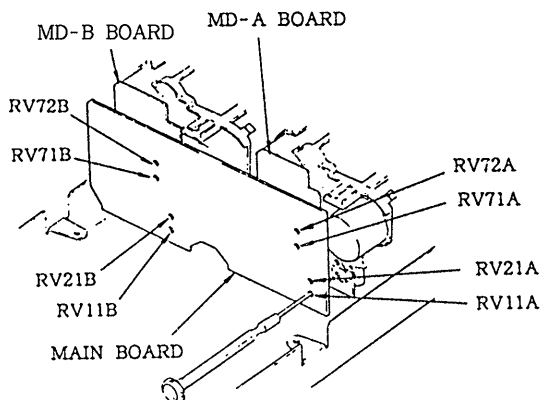
Adjustment Location : MD-A and B board

Tape Speed/playback Level Adjustment

Screwdriver to adjust the MD block



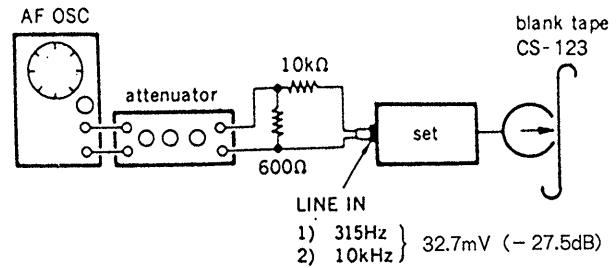
The MD block adjustment can be performed by inserting a screwdriver of which axis length (not including the shaft) is 35 mm or more through the rear side of the main board.



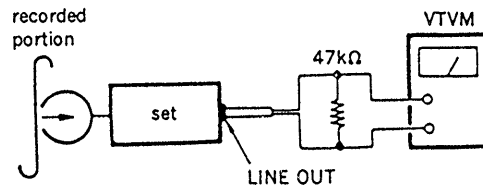
Record Bias Adjustment **DECK B**

Procedure :

1. Record Mode



2. Playback Mode



Playback the signal recorded in step 1.

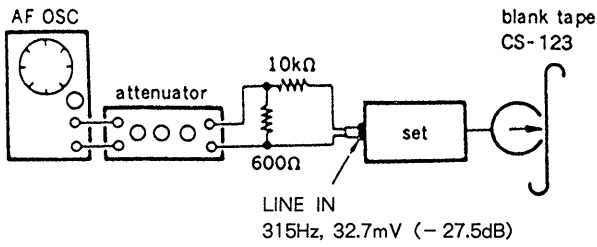
Confirm that the 10kHz playback output is $0 \pm 0.5\text{dB}$ relative to the 315Hz output. If necessary, adjust RV12 (L-CH), RV22 (R-CH) and repeat the steps given above.

Adjustment Location : MD-B board

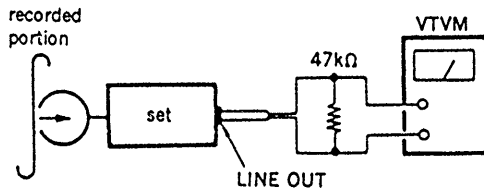
Record Level Adjustment DECK B

Procedure :

1. Record Mode



2. Playback Mode



Confirm playback the tape recorded become adjustment level as follows.

If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat steps 1 and 2.

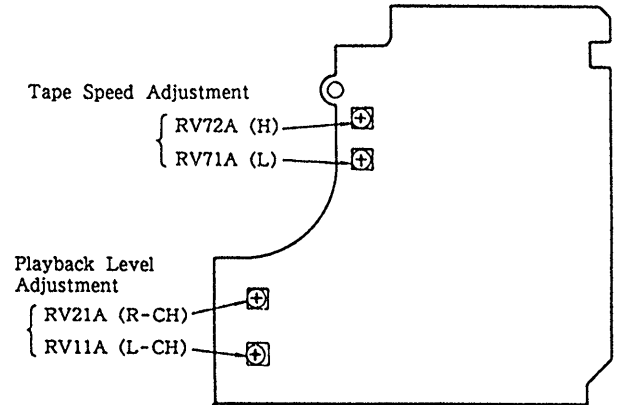
Adjustment Limits :

LINE OUT level : $-27.5 \pm 0.5\text{dB}$ (31 to 35mV)

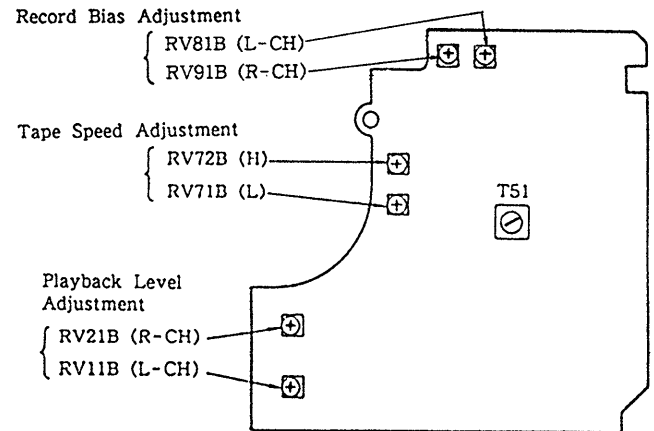
Adjustment Location : main board

ADJUSTMENT LOCATION :

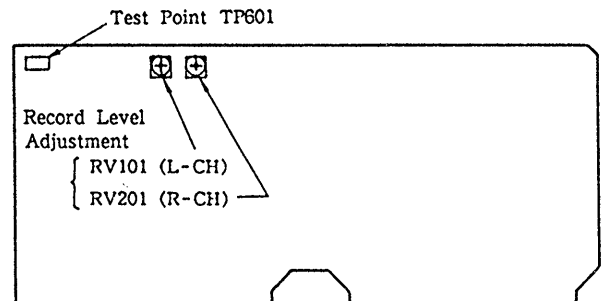
【MD-A BOARD】 component side



【MD-B BOARD】 component side



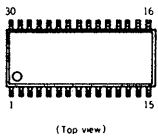
【MAIN BOARD】 component side



SECTION 5 DIAGRAMS

5-1. SEMICONDUCTOR READ LAYOUTS

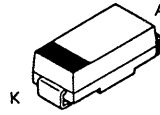
CXA1331M



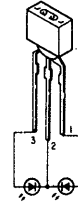
M5207L05



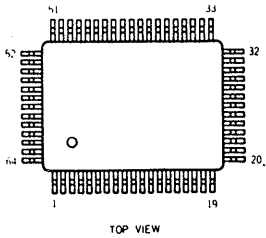
EC10DS2



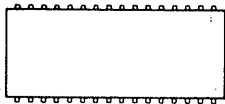
SML1260S-TP4



HD-614023-FA93



M5218AFP

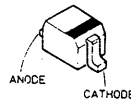
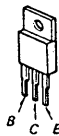


2SA1344



**MA8056
MA8062-TX
MA8091
02DZ20-TPHR3
1SS352**

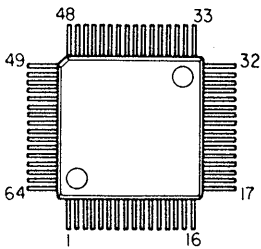
**2SA473
2SD2012**



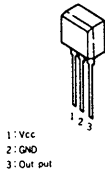
02DZ2.0-TPH3



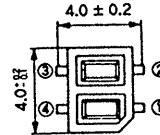
M38022M4-072FP



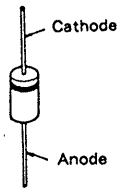
PST572E



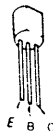
NJL5165K-B



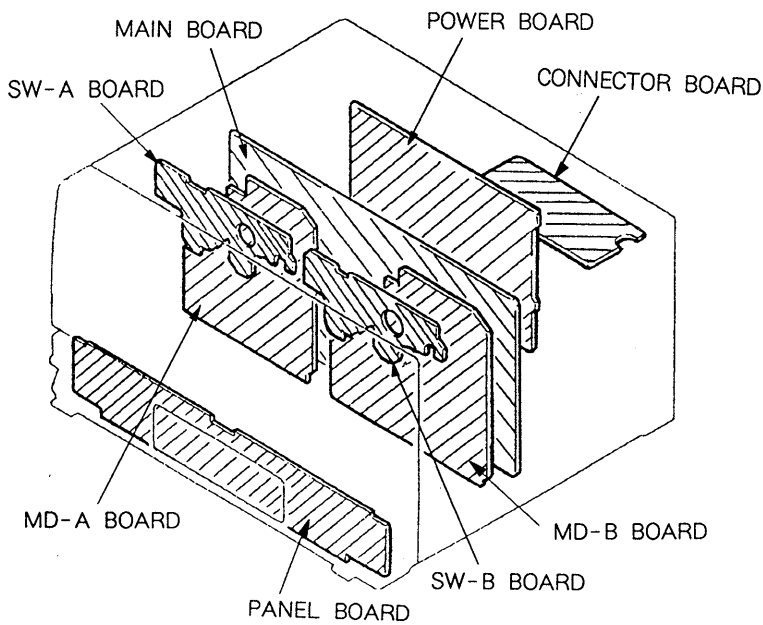
10E2



2SB1116



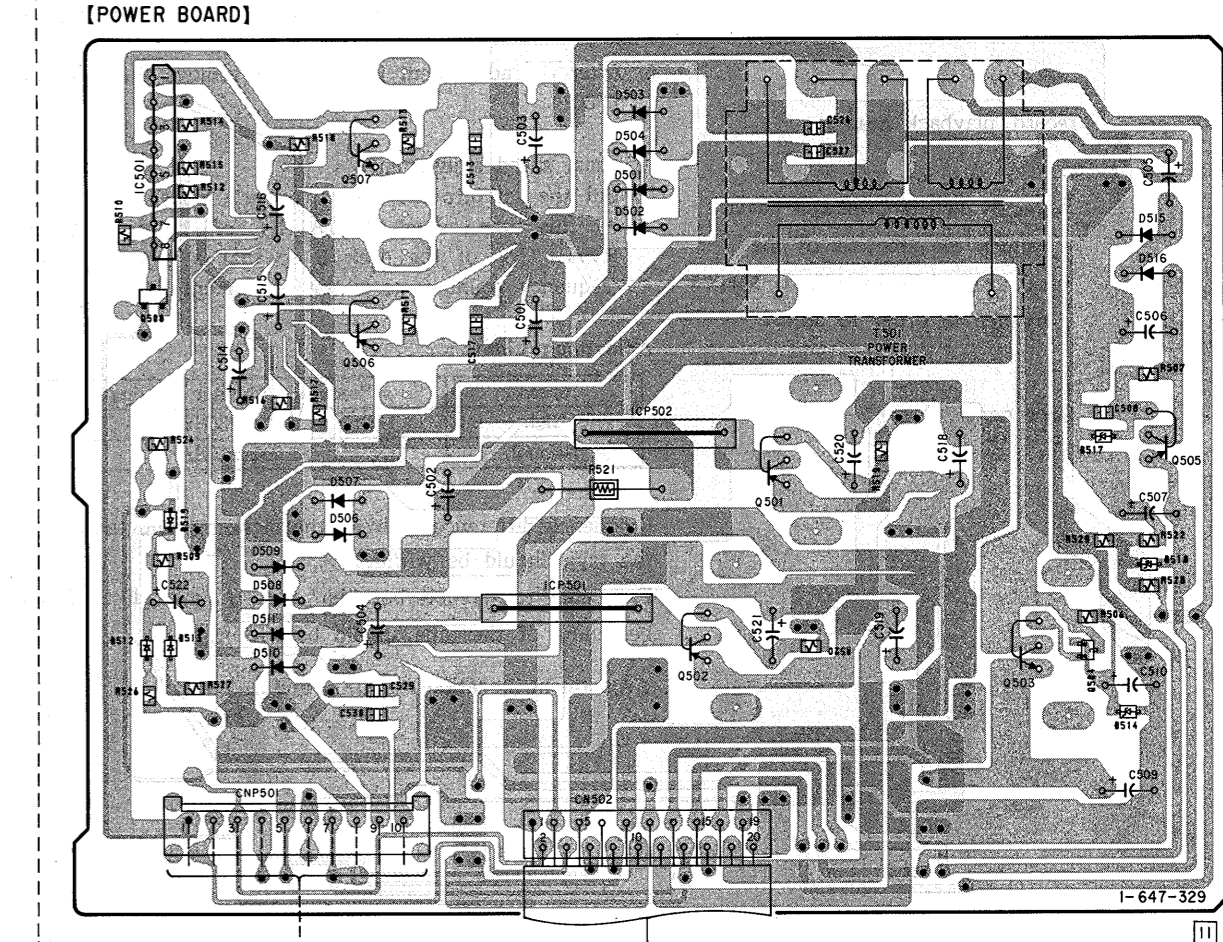
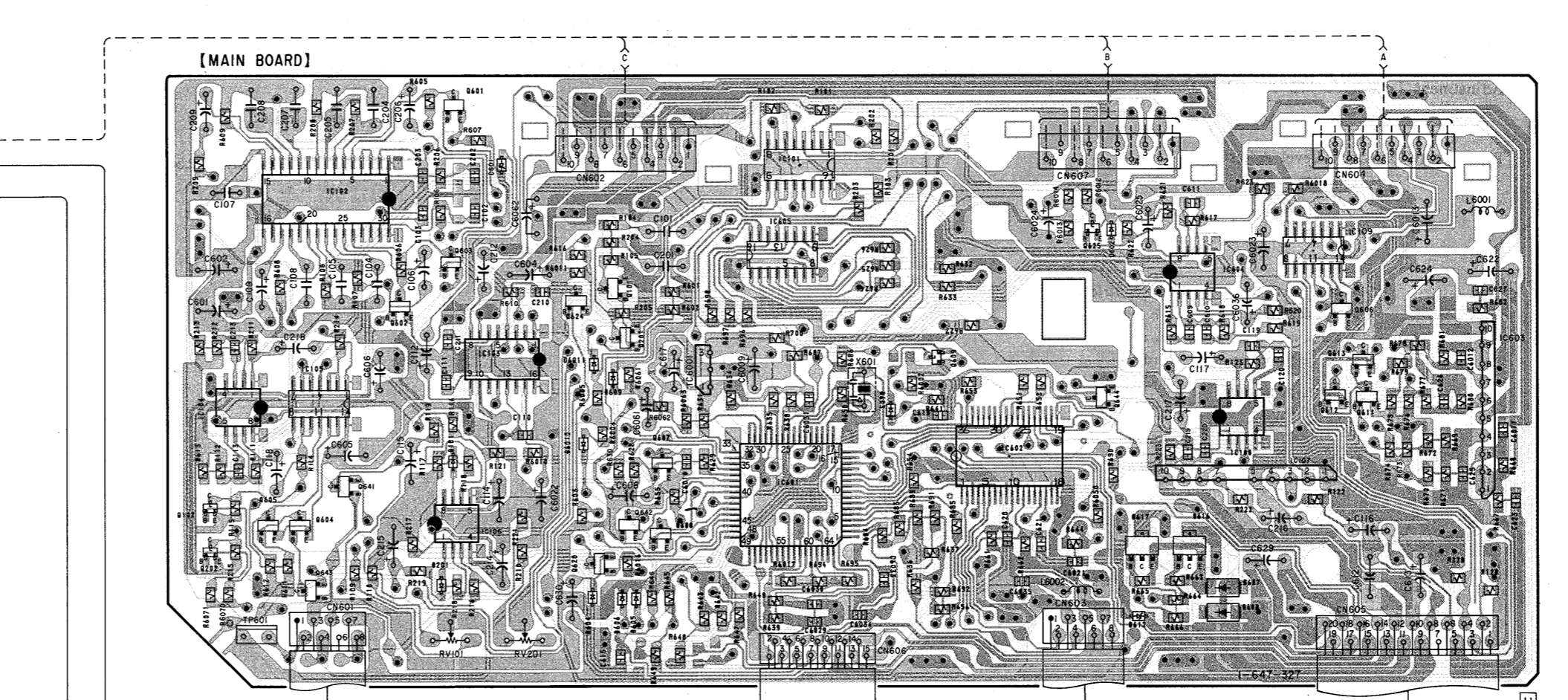
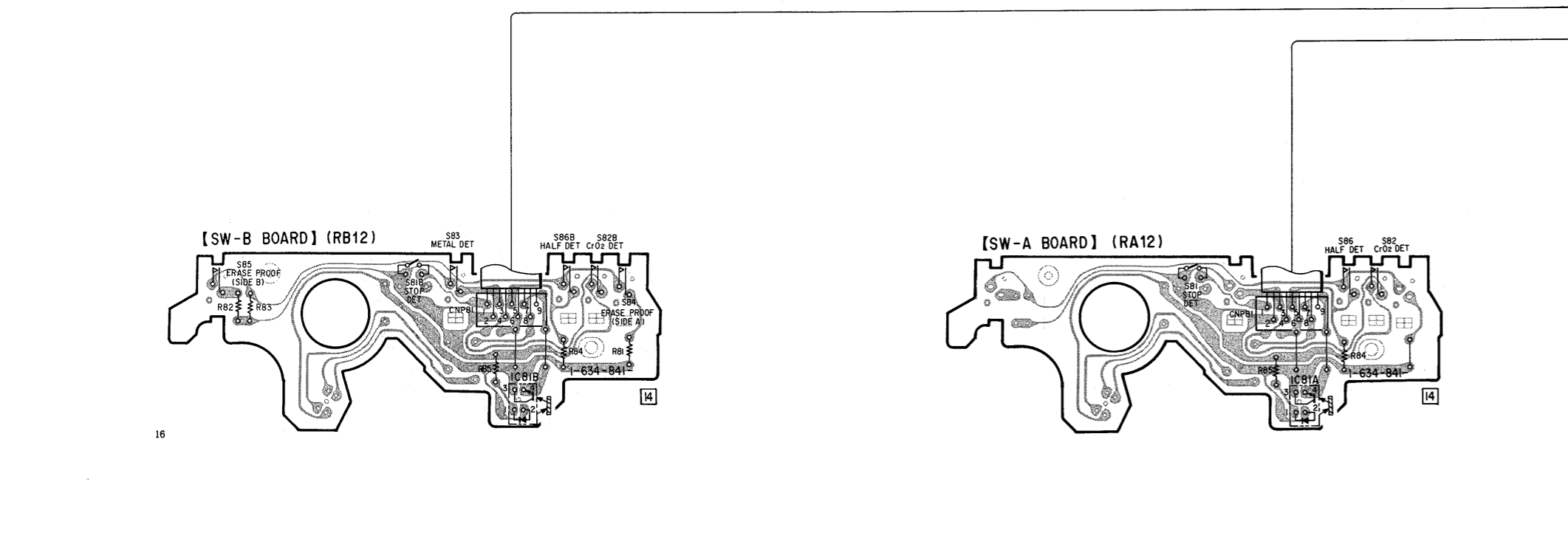
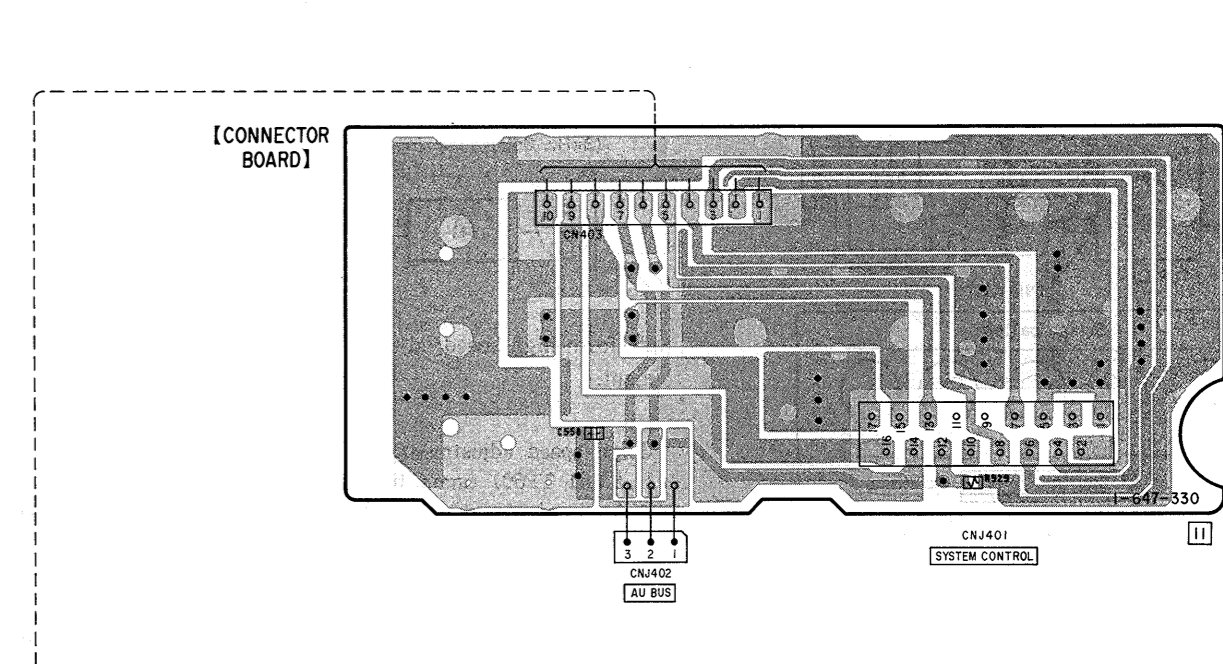
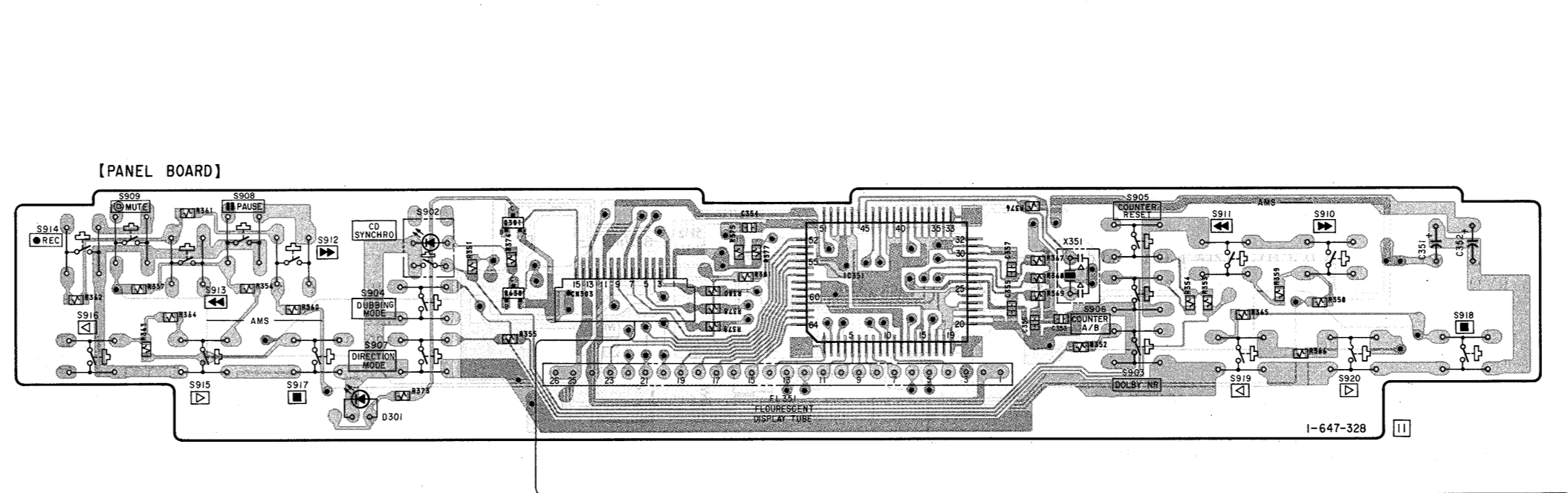
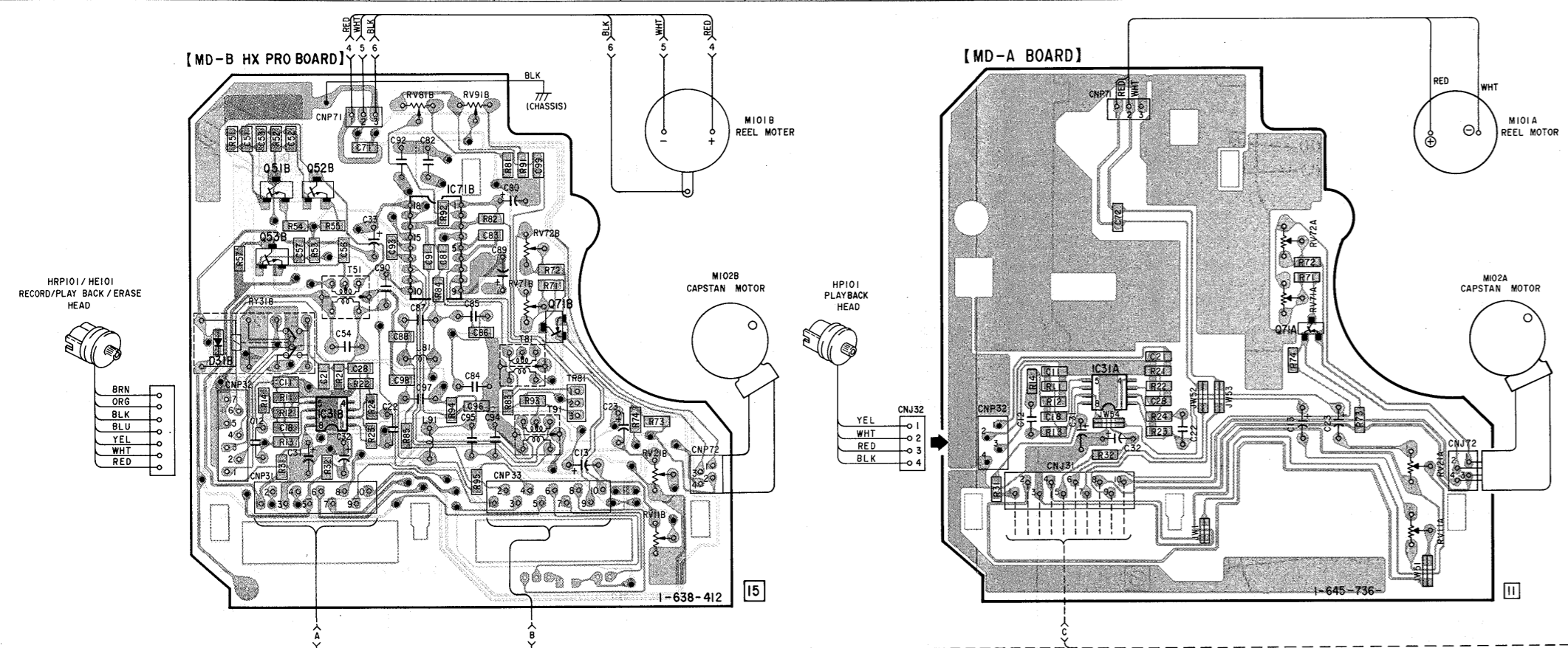
5-2. CIRCUIT BOARDS LOCATION



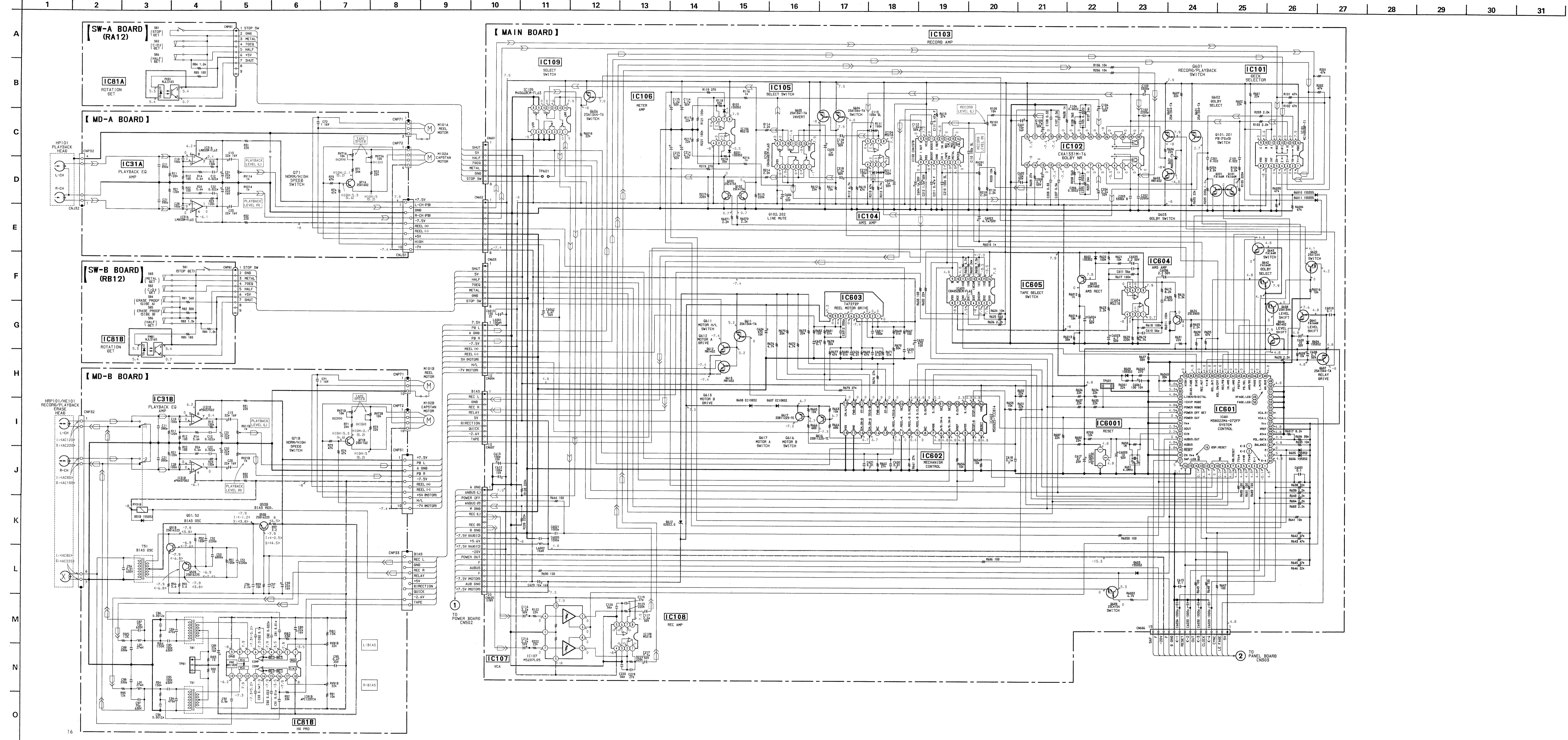
5-3. PRINTED WIRING BOARDS • See page 10 for Semiconductor Lead Layouts and Circuit Boards Location.

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

A
B
C
D
E
F
G
H
I
J



5-4. SCHEMATIC DIAGRAM — Main Section — See page 25 for IC Block Diagram.



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
Q31B	C-2	IC351	C-20
D101	H-17	IC501	F-27
D201	I-17	IC601	H-20
Q301	D-16	IC602	H-21
D501	F-30	IC603	G-25
D502	F-30	IC604	G-23
D503	E-30	IC605	F-20
D504	E-30	IC6001	G-19
D506	H-28		
D507	G-28	Q518	B-3
D508	H-28	Q528	B-3
D509	H-28	Q538	B-3
D510	H-28	Q71A	C-11
D511	H-28	Q71B	C-5
D512	H-27	Q101	G-18
D513	H-27	Q102	I-15
D514	I-33	Q201	G-18
D515	F-33	Q202	I-15
D516	F-33	Q301	B-17
D517	G-32	Q501	H-31
D518	H-33	Q502	I-30
D519	H-27	Q503	I-32
D601	F-17	Q504	I-32
D602	G-22	Q505	G-33
D603	H-20	Q506	G-28
D604	I-18	Q507	F-28
D605	I-18	Q508	F-27
D606	H-18	Q601	E-17
D607	I-23	Q602	G-16
D608	I-23	Q603	G-17
D609	H-18	Q604	H-24
D610	H-18	Q605	H-15
D6011	G-18	Q606	G-24
		Q607	H-19
		Q608	I-19
		Q609	G-21
IC31A	C-9	Q610	H-24
IC31B	D-3	Q611	H-24
IC71B	B-4	Q612	H-24
IC81A	I-11	Q613	G-24
IC81B	I-5	Q616	I-23
IC101	F-20	Q617	I-22
IC102	F-16	Q620	I-18
IC103	G-17	Q624	G-18
IC104	H-15	Q625	G-22
IC105	G-16	Q638	C-17
IC106	I-17	Q641	H-16
IC107	H-24	Q642	I-18
IC108	H-23	Q643	I-16
IC109	F-24	Q644	H-22

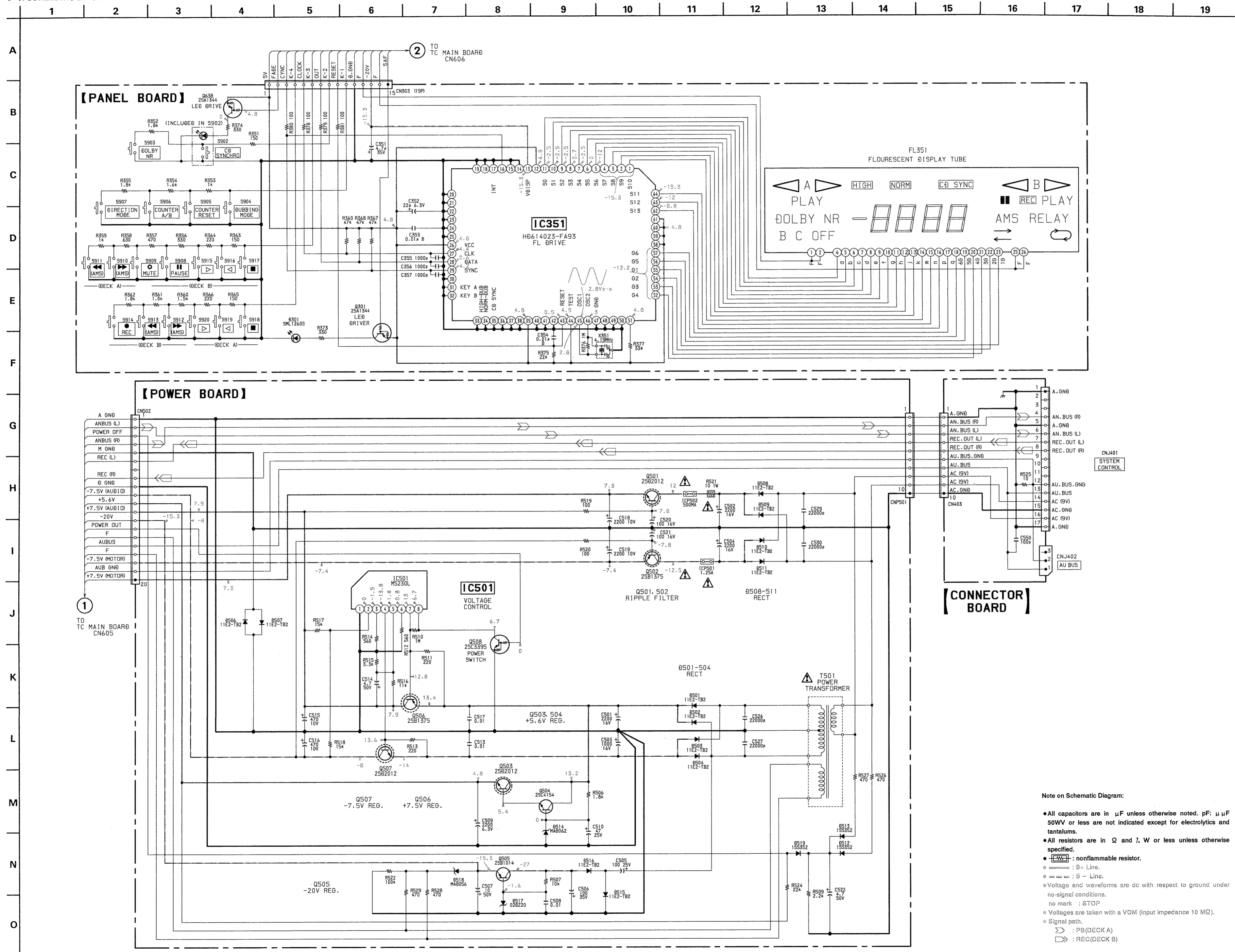
Note on Mounting Diagram :

- : Through hole.
- ◐ : Pattern on the side which is seen.
- ◑ : Pattern of the rear side.

Note on Schematic Diagram :

- All capacitors are in μF unless otherwise noted. pF: μF 500V or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and \times W or less unless otherwise specified.
- \square : nonflammable resistor.
- \square : B + Line.
- \square : B - Line.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : STOP
- Voltages are taken with a VOM (input impedance 10 M Ω).
- Signal path.
- \rightarrow : PB(DECK A)
- \rightarrow : REC(DECK B)
- \rightarrow : REC(DECK C)

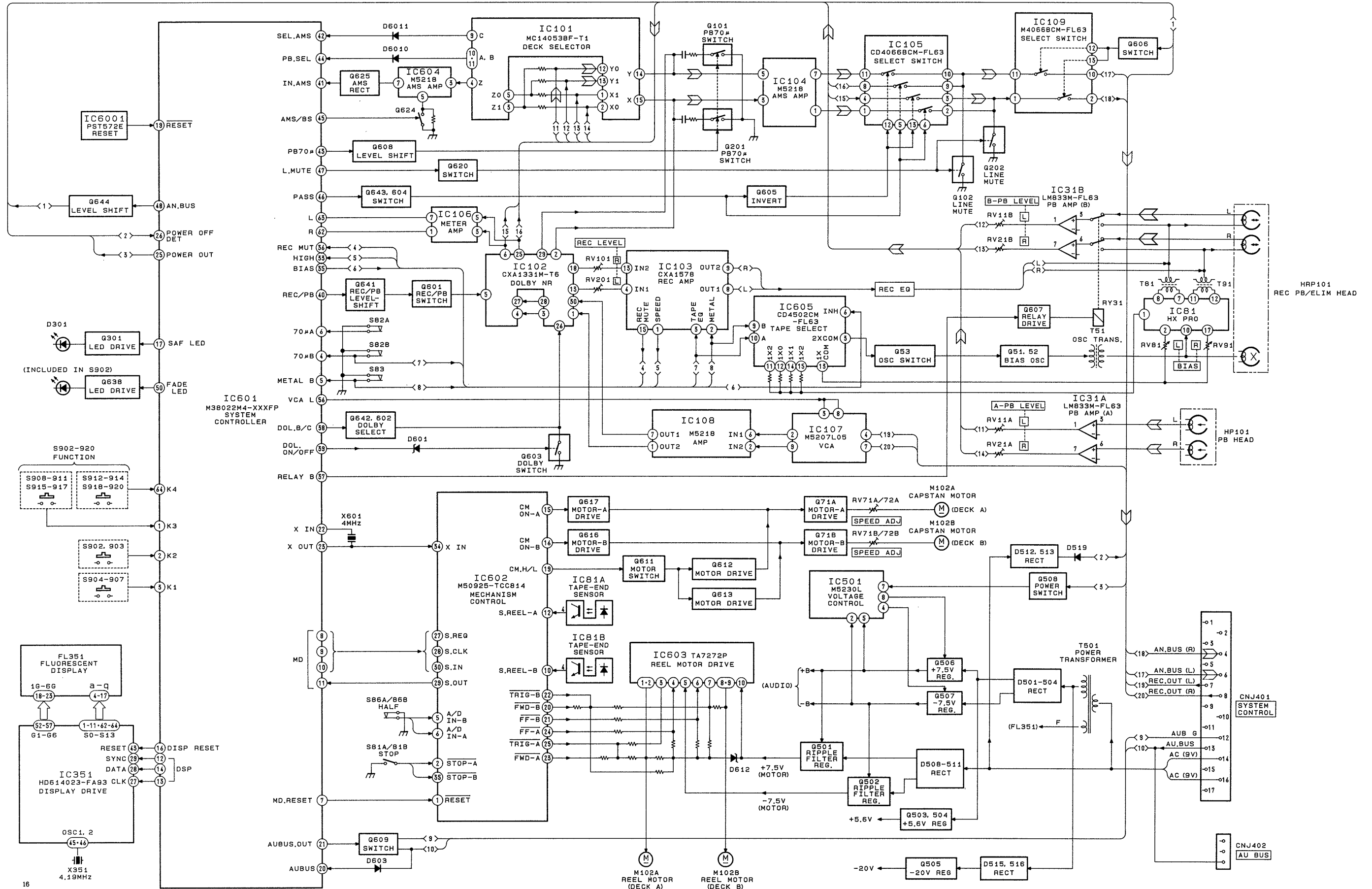
5-5. SCHEMATIC DIAGRAM — Panel Section —



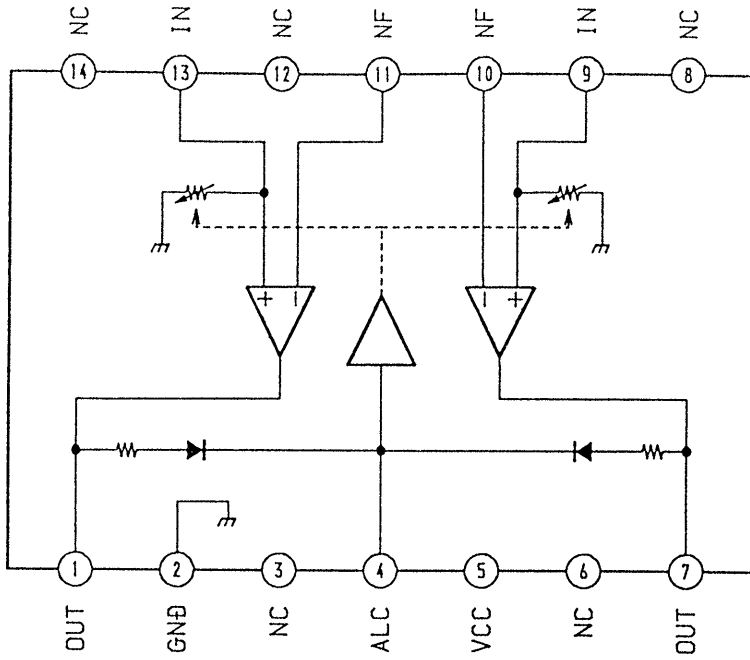
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μpF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\text{k}\Omega$, W or less unless otherwise specified.
- \square : nonflammable resistor.
- : B+ Line.
- : B- Line.
- : Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : STOP
- : Voltages are taken with a VOM (input impedance 10 M Ω).
- : Signal path.
- ▷: PB(DECK A)
- ◁: REC(DECK B)

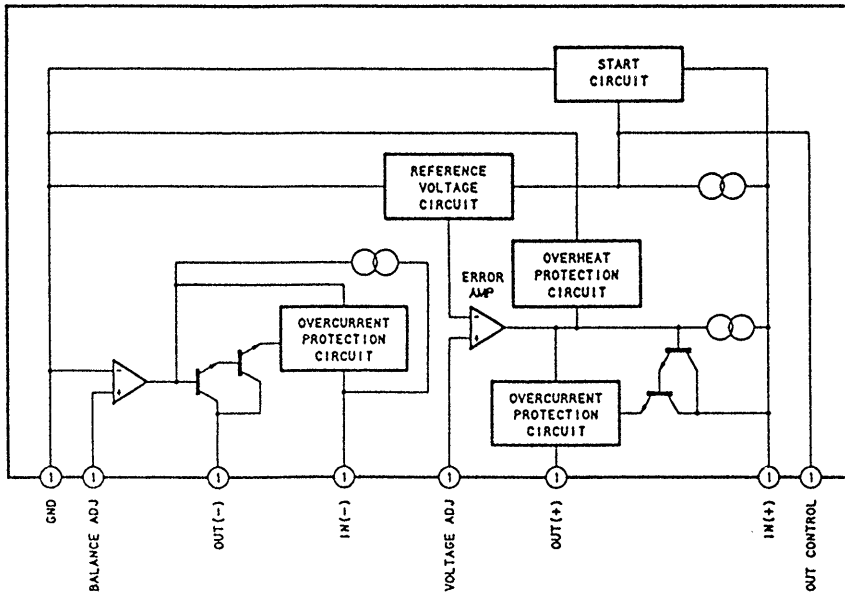
5-6. BLOCK DIAGRAM



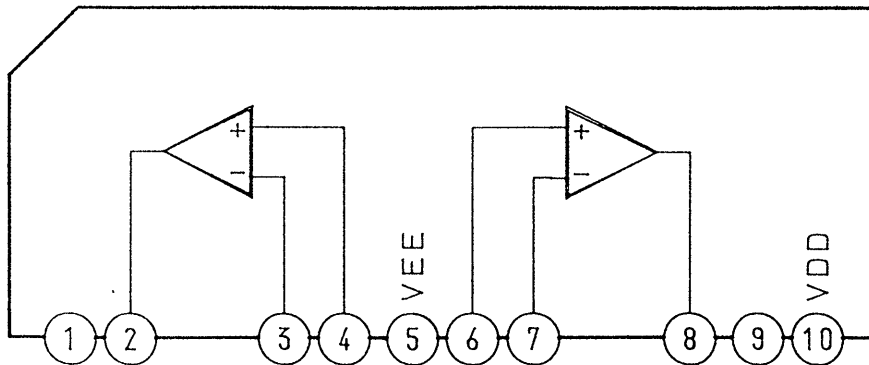
• IC106 BA3308F



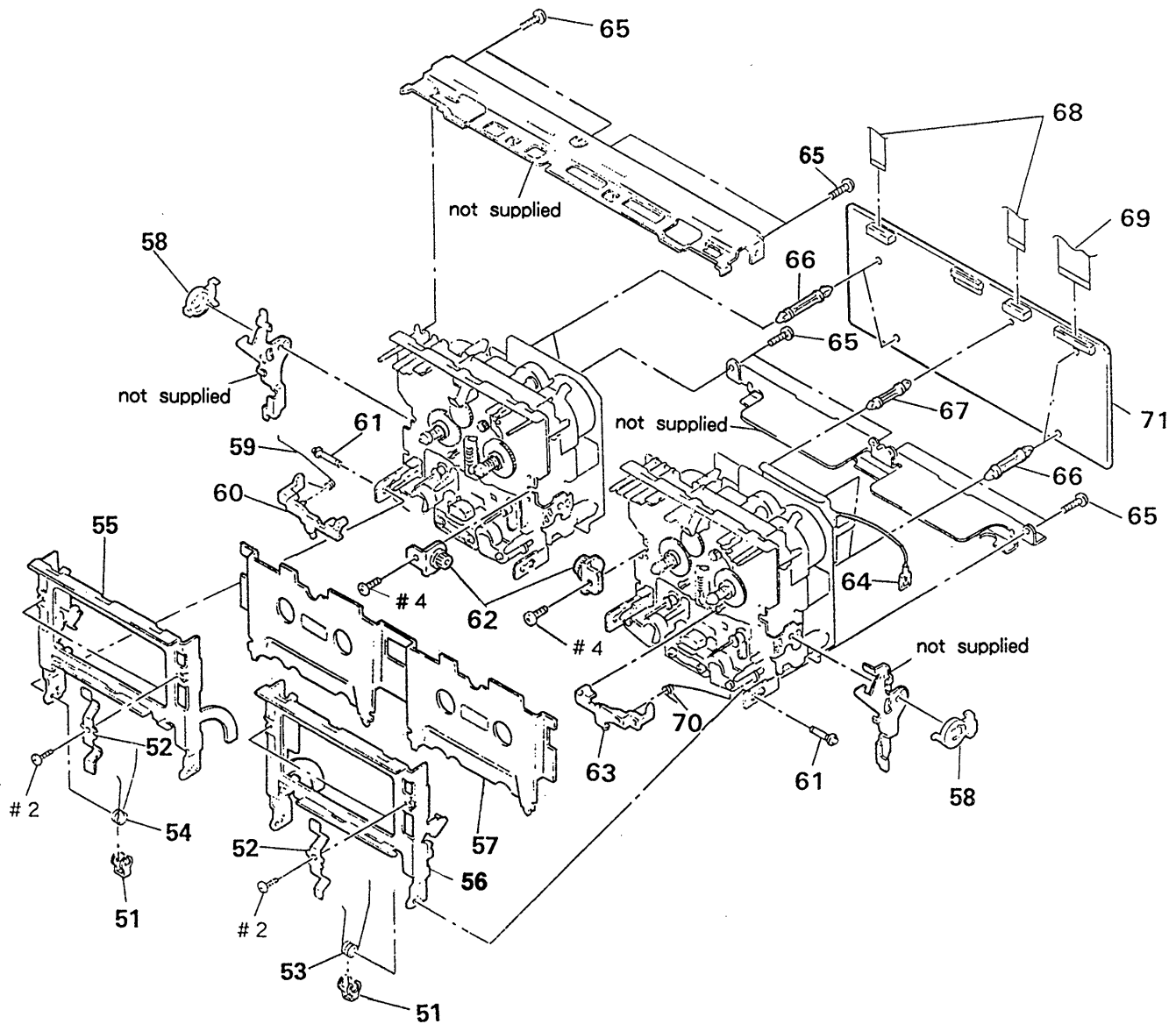
• IC501 M5230L-A



• IC603 TA7272P

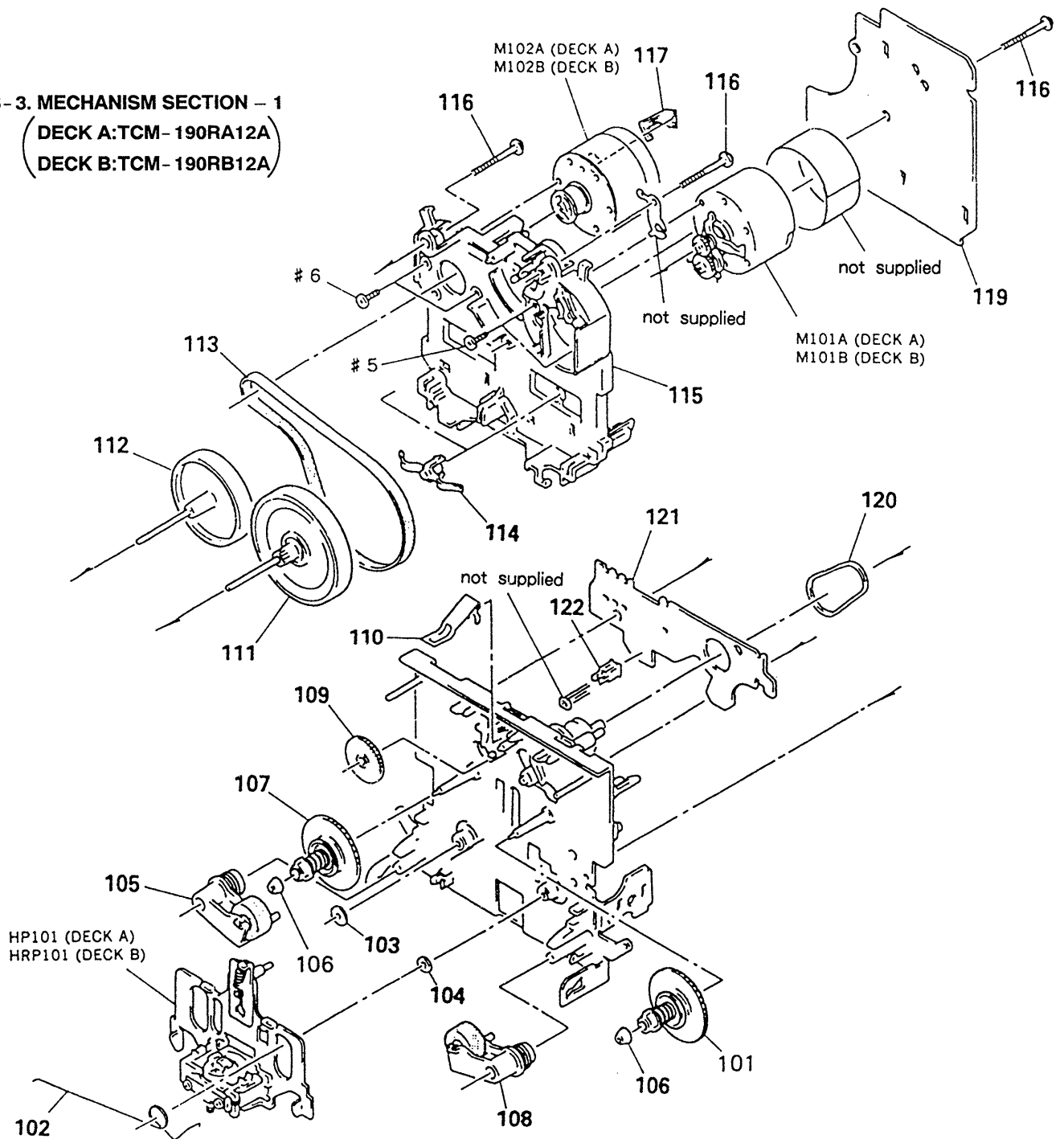


6-2. FRONT PANEL SECTION - 2



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	3-367-720-01	RING (W), RETAINING		63	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
52	3-340-137-01	SPRING, CASSETTE RETAINER		64	1-690-880-41	LEAD (WITH CONNECTOR)	
53	3-354-960-01	SPRING (LOADING R), TORSION		65	4-951-620-01	SCREW (2.6X8), +BVTP	
54	3-354-959-01	SPRING (LOADING L), TORSION		* 66	3-682-419-21	HOLDER, P. C. B	
55	X-3362-857-1	HOLDER (L) ASSY, CASSETTE		* 67	3-682-419-11	HOLDER, P. C. B	
56	X-3362-856-1	HOLDER (R) ASSY, CASSETTE		68	1-590-902-11	WIRE, FLAT TYPE (9 CORE)	
57	3-367-711-01	RETAINER, CASSETTE		69	1-696-748-11	WIRE (FLAT TYPE) (19 CORE)	
58	3-354-957-01	JOINT (LOCK LEVER)		70	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
59	3-354-961-01	SPRING (EJ SAFTY SPRING L)		* 71	A-2006-978-A	MAIN BOARD, COMPLETE(AEP, IT)	
60	3-354-955-01	LEVER (EJ SAFTY LEVER L)		* 71	A-2006-982-A	MAIN BOARD, COMPLETE(E, AUS, EA, JE, MY, SP)	
61	3-367-721-01	SHAFT (FULCRUM SHAFT)		* 71	A-2006-986-A	MAIN BOARD, COMPLETE(G)	
62	3-354-963-01	DAMPER					

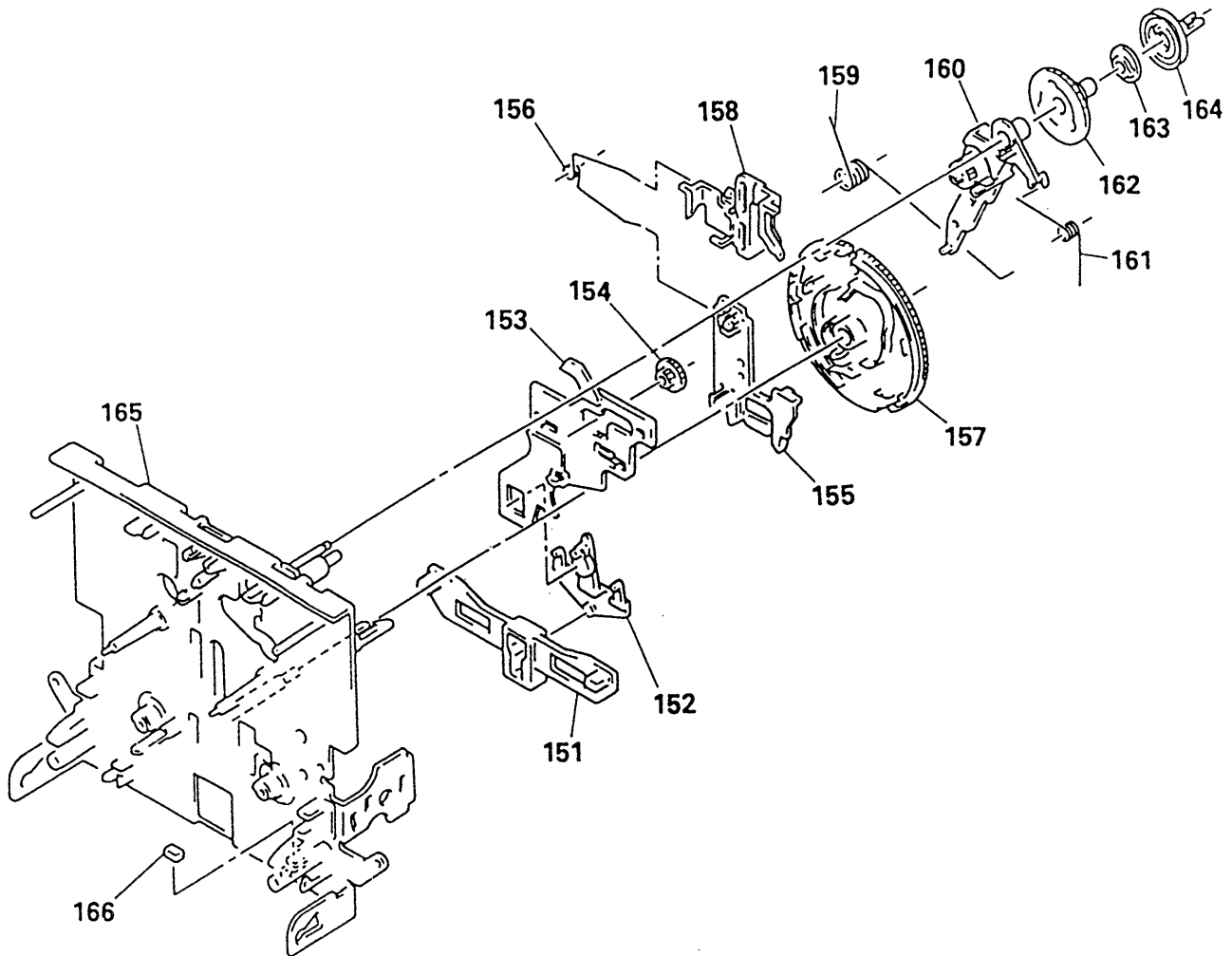
6-3. MECHANISM SECTION - 1
 (DECK A:TCM-190RA12A)
 (DECK B:TCM-190RB12A)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	X-3359-404-1	TABLE ASSY, REEL		116	3-359-414-01	SCREW (+PTPWH 2X23)	
102	3-359-455-01	SPRING, TORSION		117	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
103	3-356-714-01	WASHER		* 119	A-2006-399-A	MOUNTED PCB (RA12A), AUDIO (DECK A)	
104	3-356-713-01	WASHER		* 119	A-2006-401-A	MOUNTED PCB (RB12A), AUDIO (DECK B)	
105	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY		120	3-359-466-01	BELT (FR), SQUARE	
106	3-362-308-01	CAP (REEL)		* 121	1-634-841-14	SW-A BOARD (DECK A)	
107	X-3362-078-1	TABLE ASSY (B), REEL		* 121	1-634-841-14	SW-B BOARD (DECK B)	
108	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY		122	3-343-419-01	HOLDER (S SENSER A)	
109	3-359-424-01	GEAR (REV GEAR)		HP101	A-2003-837-F	BASE ASSY, HEAD(DECK A)	
110	3-359-430-01	SPRING(CASSETTE RETAINER), LEAF		HRP101	A-2003-838-A	BASE ASSY, HEAD(DECK B)	
111	X-3359-406-1	FLYWHEEL (FWD) ASSY		M101A	X-3363-501-1	MOTOR (REEL MOTOR) ASSY(DECK A)	
112	X-3359-410-1	FLYWHEEL (REV) ASSY		M101B	X-3363-501-1	MOTOR (REEL MOTOR) ASSY(DECK B)	
113	3-359-417-01	BELT (FLAT), CAPSTAN		M102A	X-3359-417-1	MOTOR (CAPSTAN MOTOR) ASSY(DECK A)	
114	3-575-321-00	RETAINER, THRUST, CAPSTAN		M102B	X-3359-417-1	MOTOR (CAPSTAN MOTOR) ASSY(DECK B)	
* 115	3-359-436-01	BASE (THRUST RETAINER), FITTING					

6-4. MECHANISM SECTION - 2

(DECK A:TCM-190RA12A)
 (DECK B:TCM-190RB12A)



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
* 151	3-359-425-01	SLIDER (REVERSE SLIDER)		159	3-359-456-01	SPRING (TRIGGER SPRING), TORSION	
152	3-359-426-01	LEVER (REVERSE LEVER)		160	X-3359-405-1	LEVER (FR ARM) ASSY	
* 153	3-359-415-01	SLIDER (TRIGGER SLIDER)		161	3-359-453-01	SPRING (FR ARM), TORSION	
154	3-359-448-01	GEAR (TRIGGER)		162	3-359-419-01	GEAR (FR GEAR)	
* 155	3-359-427-01	SLIDER (LEVERSE SLIDER)		163	3-359-421-01	CLUTCH (REEL DISK)	
156	3-359-454-01	SPRING, TORSION		164	3-359-418-01	PULLEY (FR PULLEY)	
157	3-359-420-01	GEAR (CAM GEAR)		165	X-3363-790-1	CHASSIS ASSY, MECHANICAL	
158	3-359-429-01	SLIDER (BRAKE PLATE)		166	3-359-469-01	SPACER	

SECTION 7 ELECTRICAL PARTS LIST

MAIN	POWER
PANEL	CONNECTOR

NOTE:

- IT : Italian model
- G : Germany model
- EA: Saudi Arabia model
- SP: Singapore model
- MY: Malaysia model
- AUS: Australian model
- JE : Tourist model

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS :
 uF : μ F

- RESISTORS
 All resistors are in ohms.
 METAL : metal-film resistor
 METAL OXIDE: Metal Oxide-film resistor
 F : nonflammable
- COILS
 uH : μ H
- SEMICONDUCTORS
 In each case, u : μ , for example :
 uA... : μ A..., uPA..., μ PA...,
 uPB... , μ PB... , uPC..., μ PC... ,
 uPD..., μ PD...

Ref. No.	Part No.	Description	Remarks		Ref. No.	Part No.	Description	Remarks
*	A-2006-978-A	MAIN BOARD, COMPLETE(AEP, IT) *****			C111	1-164-005-11	CERAMIC CHIP	0.47uF 25V
*	A-2006-982-A	MAIN BOARD, COMPLETE(E, AUS, EA, JE, MY, SP) *****			C112	1-124-903-11	ELECT	1uF 20% 50V
*	A-2006-986-A	MAIN BOARD, COMPLETE(G) *****			C113	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
					C114	1-124-927-11	ELECT	4.7uF 20% 100V
*	A-2006-979-A	PANEL BOARD, COMPLETE(AEP, IT) *****			C115	1-124-925-11	ELECT	2.2uF 20% 100V
*	A-2006-983-A	PANEL BOARD, COMPLETE(E, AUS, EA, JE, MY, SP) *****			C116	1-124-257-00	ELECT	2.2uF 20% 50V
*	A-2006-987-A	PANEL BOARD, COMPLETE(G) *****			C117	1-124-257-00	ELECT	2.2uF 20% 50V
*	A-2006-980-A	POWER BOARD, COMPLETE (AEP, IT) *****			C118	1-124-257-00	ELECT	2.2uF 20% 50V
*	A-2006-984-A	POWER BOARD, COMPLETE(E, AUS, EA, JE, MY, SP) *****			C119	1-163-103-00	CERAMIC CHIP	27PF 5% 50V
*	A-2006-988-A	POWER BOARD, COMPLETE (G) *****			C120	1-163-111-00	CERAMIC CHIP	56PF 5% 50V
*	1-647-330-11	CONNECTOR BOARD *****			C201	1-136-157-00	FILM	0.022uF 5% 50V
*	3-367-839-01	HOLDER, FL TUBE			C202	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V
*	3-309-144-31	HEAT SINK			C203	1-164-182-11	CERAMIC CHIP	0.0033uF 10% 50V
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			C204	1-106-351-00	MYLAR	2200PF 5% 200V
		< CAPACITOR >			C205	1-106-351-00	MYLAR	2200PF 5% 200V
C101	1-136-157-00	FILM	0.022uF 5% 50V		C206	1-124-925-11	ELECT	2.2uF 20% 100V
C102	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V		C207	1-136-174-00	FILM	0.56uF 5% 50V
C103	1-164-182-11	CERAMIC CHIP	0.0033uF 10% 50V		C208	1-136-171-00	FILM	0.33uF 5% 50V
C104	1-106-351-00	MYLAR	2200PF 5% 200V		C209	1-124-927-11	ELECT	4.7uF 20% 100V
C105	1-106-351-00	MYLAR	2200PF 5% 200V		C210	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C106	1-124-925-11	ELECT	2.2uF 20% 100V		C211	1-164-005-11	CERAMIC CHIP	0.47uF 25V
C107	1-136-174-00	FILM	0.56uF 5% 50V		C212	1-124-903-11	ELECT	1uF 20% 50V
C108	1-136-171-00	FILM	0.33uF 5% 50V		C213	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C109	1-124-927-11	ELECT	4.7uF 20% 100V		C214	1-124-927-11	ELECT	4.7uF 20% 100V
C110	1-163-117-00	CERAMIC CHIP	100PF 5% 50V		C215	1-124-925-11	ELECT	2.2uF 20% 100V
					C216	1-124-257-00	ELECT	2.2uF 20% 50V
					C217	1-124-257-00	ELECT	2.2uF 20% 50V
					C218	1-124-257-00	ELECT	2.2uF 20% 50V
					C219	1-163-103-00	CERAMIC CHIP	27PF 5% 50V
					C220	1-163-111-00	CERAMIC CHIP	56PF 5% 50V
					C351	1-126-163-11	ELECT	4.7uF 20% 50V
					C352	1-124-638-11	ELECT	22uF 20% 10V
					C353	1-164-232-11	CERAMIC CHIP	0.01uF 50V
					C354	1-164-232-11	CERAMIC CHIP	0.01uF 50V
					C355	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

MAIN	POWER	PANEL	CONNECTOR
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Ref. No.	Part No.	Description	Remarks
C356	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C357	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C501	1-126-768-11	ELECT	2200uF 20% 16V
C502	1-126-768-11	ELECT	2200uF 20% 16V
C503	1-124-360-00	ELECT	1000uF 20% 16V
C504	1-126-768-11	ELECT	2200uF 20% 16V
C505	1-124-478-11	ELECT	100uF 20% 25V
C506	1-124-122-11	ELECT	100uF 20% 50V
C507	1-124-907-11	ELECT	10uF 20% 50V
C508	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C509	1-124-893-11	ELECT	2200uF 20% 10V
C510	1-124-477-11	ELECT	47uF 20% 25V
C513	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C514	1-124-927-11	ELECT	4.7uF 20% 100V
C515	1-124-472-11	ELECT	470uF 20% 10V
C516	1-124-472-11	ELECT	470uF 20% 10V
C517	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C518	1-126-927-11	ELECT	2200uF 20% 10V
C519	1-126-927-11	ELECT	2200uF 20% 10V
C520	1-126-101-11	ELECT	100uF 20% 16V
C521	1-126-101-11	ELECT	100uF 20% 16V
C522	1-124-927-11	ELECT	4.7uF 20% 100V
C526	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C527	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C529	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C530	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C550	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C601	1-126-157-11	ELECT	10uF 20% 16V
C602	1-124-907-11	ELECT	10uF 20% 50V
C603	1-124-903-11	ELECT	1uF 20% 50V
C604	1-124-903-11	ELECT	1uF 20% 50V
C605	1-124-903-11	ELECT	1uF 20% 50V
C606	1-124-903-11	ELECT	1uF 20% 50V
C608	1-124-927-11	ELECT	4.7uF 20% 100V
C609	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C610	1-163-111-00	CERAMIC CHIP	56PF 5% 50V
C611	1-163-111-00	CERAMIC CHIP	56PF 5% 50V
C612	1-126-177-11	ELECT	100uF 20% 10V
C613	1-126-177-11	ELECT	100uF 20% 10V
C615	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C617	1-124-477-11	ELECT	47uF 20% 25V
C618	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C620	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C621	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C622	1-124-472-11	ELECT	470uF 20% 10V
C623	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C624	1-124-472-11	ELECT	470uF 20% 10V
C625	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C626	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C627	1-163-038-00	CERAMIC CHIP	0.1uF 25V

Ref. No.	Part No.	Description	Remarks
C629	1-126-157-11	ELECT	10uF 20% 16V
C630	1-124-916-11	ELECT	22uF 20% 63V
C6009	1-124-907-11	ELECT	10uF 20% 50V
C6010	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C6011	1-163-129-00	CERAMIC CHIP	330PF 5% 50V
C6012	1-163-129-00	CERAMIC CHIP	330PF 5% 50V
C6013	1-124-478-11	ELECT	100uF 20% 25V
C6021	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C6022	1-124-927-11	ELECT	4.7uF 20% 100V
C6023	1-126-163-11	ELECT	4.7uF 20% 50V
C6024	1-124-257-00	ELECT	2.2uF 20% 50V
C6025	1-124-257-00	ELECT	2.2uF 20% 50V
C6029	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C6030	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C6031	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C6033	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C6034	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C6035	1-163-141-00	CERAMIC CHIP	0.001uF 5% 50V
C6036	1-124-257-00	ELECT	2.2uF 20% 50V
C6061	1-124-443-00	ELECT	100uF 20% 10V
C6062	1-124-902-00	ELECT	0.47uF 20% 50V
< CONNECTOR >			
CN303	1-696-746-11	WIRE (FLAT TYPE) (15 CORE)	
* CN403	1-569-505-11	PIN, CONNECTOR 10P	
CN502	1-695-775-11	CONNECTOR, FFC/FPC 19P	
CN601	1-573-101-11	SOCKET, CONNECTOR 9P	
CN602	1-580-783-11	CONNECTOR, BOARD TO BOARD	
CN603	1-573-101-11	SOCKET, CONNECTOR 9P	
CN604	1-580-783-11	CONNECTOR, BOARD TO BOARD	
CN605	1-695-739-11	CONNECTOR, FFC/FPC 19P	
* CN606	1-580-417-11	SOCKET, CONNECTOR 15P	
CN607	1-580-783-11	CONNECTOR, BOARD TO BOARD	
* CNP501	1-569-496-11	SOCKET, CONNECTOR 10P	
< JACK >			
CNJ401	1-569-624-21	SOCKET, CONNECTOR 17P (SYSTEM CONTROL)	
* CNJ402	1-565-561-11	PIN, CONNECTOR 3P (AM PASS)	
< DIODE >			
D101	8-719-016-74	DIODE 1SS352	
D201	8-719-016-74	DIODE 1SS352	
D301	8-719-026-64	DIODE SML1260S-TP4	
D501	8-719-200-02	DIODE 10E2	
D502	8-719-200-02	DIODE 10E2	
D503	8-719-200-02	DIODE 10E2	
D504	8-719-200-02	DIODE 10E2	
D506	8-719-200-02	DIODE 10E2	
D507	8-719-200-02	DIODE 10E2	
D508	8-719-200-02	DIODE 10E2	

MAIN	POWER	PANEL	CONNECTOR
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Ref. No.	Part No.	Description	Remarks
D509	8-719-200-02	DIODE 10E2	
D510	8-719-200-02	DIODE 10E2	
D511	8-719-200-02	DIODE 10E2	
D512	8-719-016-74	DIODE 1SS352	
D513	8-719-016-74	DIODE 1SS352	
D514	8-719-422-58	DIODE MA8062-TX	
D515	8-719-200-02	DIODE 10E2	
D516	8-719-200-02	DIODE 10E2	
D517	8-719-017-34	DIODE 02DZ20-TPHR3	
D518	8-719-422-46	DIODE MA8056	
D519	8-719-016-74	DIODE 1SS352	
D601	8-719-422-91	DIODE MA8091	
D602	8-719-016-74	DIODE 1SS352	
D603	8-719-016-74	DIODE 1SS352	
D604	8-719-016-74	DIODE 1SS352	
D605	8-719-016-74	DIODE 1SS352	
D606	8-719-016-74	DIODE 1SS352	
D607	8-719-210-33	DIODE EC10DS2	
D608	8-719-210-33	DIODE EC10DS2	
D609	8-719-016-74	DIODE 1SS352	
D612	8-719-016-84	DIODE 02DZ2.0-TPH3	
D6010	8-719-016-74	DIODE 1SS352	
D6011	8-719-016-74	DIODE 1SS352	
< FLUORESCENT >			
FL351	1-519-708-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC101	8-759-300-71	IC HD14053BFP	
IC102	8-752-037-90	IC CXA1331M	
IC103	8-752-055-60	IC CXA1578M	
IC104	8-759-636-55	IC M5218AFP	
IC105	8-759-516-47	IC CD4066BCM	
IC106	8-759-636-55	IC M5218AFP	
IC107	8-759-634-96	IC M5207L05	
IC108	8-759-636-55	IC M5218AFP	
IC109	8-759-516-47	IC CD4066BCM	
IC351	8-759-323-35	IC HD-614023-FA93	
IC501	8-759-602-66	IC M5230L-A	
IC601	8-759-163-38	IC M38022M4-072FP	
IC602	8-759-636-67	IC M50925-482FP	
IC603	8-759-207-05	IC TA7272P	
IC604	8-759-636-55	IC M5218AFP	
IC605	8-759-516-41	IC CD4052BCM	
IC6001	8-759-520-90	IC PST572E	
< IC LINK >			
ICP501	1-532-840-21	LINK, IC	
ICP502	1-532-836-21	LINK, IC	

Ref. No.	Part No.	Description	Remarks
< COIL >			
L6001	1-410-482-31	INDUCTOR 100uH	
L6002	1-410-470-11	INDUCTOR 10uH	
< TRANSISTOR >			
Q101	8-729-207-56	TRANSISTOR RN1402	
Q102	8-729-602-21	TRANSISTOR 2SC4154	
Q201	8-729-207-56	TRANSISTOR RN1402	
Q202	8-729-602-21	TRANSISTOR 2SC4154	
Q301	8-729-805-65	TRANSISTOR 2SA1344	
Q501	8-729-209-15	TRANSISTOR 2SD2012	
Q502	8-729-141-83	TRANSISTOR 2SA473	
Q503	8-729-209-15	TRANSISTOR 2SD2012	
Q504	8-729-602-21	TRANSISTOR 2SC4154	
Q505	8-729-118-01	TRANSISTOR 2SB1116	
Q506	8-729-141-83	TRANSISTOR 2SA473	
Q507	8-729-209-15	TRANSISTOR 2SD2012	
Q508	8-729-805-45	TRANSISTOR 2SC3395	
Q601	8-729-805-65	TRANSISTOR 2SA1344	
Q602	8-729-805-65	TRANSISTOR 2SA1344	
Q603	8-729-207-56	TRANSISTOR RN1402	
Q604	8-729-805-65	TRANSISTOR 2SA1344	
Q605	8-729-901-06	TRANSISTOR DTA144EK	
Q606	8-729-805-65	TRANSISTOR 2SA1344	
Q607	8-729-805-65	TRANSISTOR 2SA1344	
Q608	8-729-805-65	TRANSISTOR 2SA1344	
Q609	8-729-602-21	TRANSISTOR 2SC4154	
Q611	8-729-805-65	TRANSISTOR 2SA1344	
Q612	8-729-207-56	TRANSISTOR RN1402	
Q613	8-729-207-56	TRANSISTOR RN1402	
Q616	8-729-804-41	TRANSISTOR 2SB1122-S	
Q617	8-729-804-41	TRANSISTOR 2SB1122-S	
Q620	8-729-805-65	TRANSISTOR 2SA1344	
Q624	8-729-805-40	TRANSISTOR 2SC3900	
Q625	8-729-602-36	TRANSISTOR 2SA1602	
Q638	8-729-805-65	TRANSISTOR 2SA1344	
Q641	8-729-207-56	TRANSISTOR RN1402	
Q642	8-729-207-56	TRANSISTOR RN1402	
Q643	8-729-207-56	TRANSISTOR RN1402	
Q644	8-729-207-56	TRANSISTOR RN1402	
< RESISTOR >			
R101	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R102	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R103	1-216-056-00	METAL GLAZE 2K 5% 1/10W	
R104	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R105	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R106	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R107	1-216-082-00	METAL GLAZE 24K 5% 1/10W	

MAIN	POWER	PANEL	CONNECTOR
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Ref. No.	Part No.	Description	Remarks		
R108	1-216-043-00	METAL CHIP	560	5%	1/10W
R109	1-216-073-00	METAL CHIP	10K	5%	1/10W
R110	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R111	1-216-097-00	METAL CHIP	100K	5%	1/10W
R112	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R114	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R115	1-216-105-00	METAL CHIP	220K	5%	1/10W
R116	1-216-049-00	METAL CHIP	1K	5%	1/10W
R117	1-216-081-00	METAL CHIP	22K	5%	1/10W
R118	1-216-085-00	METAL CHIP	33K	5%	1/10W
R119	1-216-035-00	METAL CHIP	270	5%	1/10W
R121	1-216-097-00	METAL CHIP	100K	5%	1/10W
R122	1-216-081-00	METAL CHIP	22K	5%	1/10W
R123	1-216-105-00	METAL CHIP	220K	5%	1/10W
R128	1-216-105-00	METAL CHIP	220K	5%	1/10W
R201	1-216-089-00	METAL CHIP	47K	5%	1/10W
R202	1-216-089-00	METAL CHIP	47K	5%	1/10W
R203	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R204	1-216-060-00	METAL GLAZE	3K	5%	1/10W
R205	1-216-105-00	METAL CHIP	220K	5%	1/10W
R206	1-216-073-00	METAL CHIP	10K	5%	1/10W
R207	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R208	1-216-043-00	METAL CHIP	560	5%	1/10W
R209	1-216-073-00	METAL CHIP	10K	5%	1/10W
R210	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R211	1-216-097-00	METAL CHIP	100K	5%	1/10W
R212	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R213	1-216-089-00	METAL CHIP	47K	5%	1/10W
R214	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R215	1-216-105-00	METAL CHIP	220K	5%	1/10W
R216	1-216-049-00	METAL CHIP	1K	5%	1/10W
R217	1-216-081-00	METAL CHIP	22K	5%	1/10W
R218	1-216-085-00	METAL CHIP	33K	5%	1/10W
R219	1-216-035-00	METAL CHIP	270	5%	1/10W
R221	1-216-097-00	METAL CHIP	100K	5%	1/10W
R222	1-216-081-00	METAL CHIP	22K	5%	1/10W
R223	1-216-105-00	METAL CHIP	220K	5%	1/10W
R228	1-216-105-00	METAL CHIP	220K	5%	1/10W
R351	1-216-029-00	METAL CHIP	150	5%	1/10W
R352	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R353	1-216-049-00	METAL CHIP	1K	5%	1/10W
R354	1-216-054-00	METAL GLAZE	1.6K	5%	1/10W
R355	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R356	1-216-037-00	METAL CHIP	330	5%	1/10W
R357	1-216-041-00	METAL CHIP	470	5%	1/10W
R358	1-216-045-00	METAL CHIP	680	5%	1/10W
R359	1-216-049-00	METAL CHIP	1K	5%	1/10W
R360	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R361	1-216-049-00	METAL CHIP	1K	5%	1/10W
R362	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R363	1-216-029-00	METAL CHIP	150	5%	1/10W

Ref. No.	Part No.	Description	Remarks		
R364	1-216-033-00	METAL CHIP	220	5%	1/10W
R365	1-216-029-00	METAL CHIP	150	5%	1/10W
R366	1-216-033-00	METAL CHIP	220	5%	1/10W
R367	1-216-089-00	METAL CHIP	47K	5%	1/10W
R368	1-216-089-00	METAL CHIP	47K	5%	1/10W
R369	1-216-089-00	METAL CHIP	47K	5%	1/10W
R373	1-216-037-00	METAL CHIP	330	5%	1/10W
R374	1-216-037-00	METAL CHIP	330	5%	1/10W
R375	1-216-081-00	METAL CHIP	22K	5%	1/10W
R376	1-216-121-00	METAL CHIP	1M	5%	1/10W
R377	1-216-085-00	METAL CHIP	33K	5%	1/10W
R378	1-216-025-00	METAL CHIP	100	5%	1/10W
R379	1-216-025-00	METAL CHIP	100	5%	1/10W
R380	1-216-025-00	METAL CHIP	100	5%	1/10W
R381	1-216-025-00	METAL CHIP	100	5%	1/10W
R506	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R507	1-216-073-00	METAL CHIP	10K	5%	1/10W
R509	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R510	1-216-121-00	METAL CHIP	1M	5%	1/10W
R511	1-216-033-00	METAL CHIP	220	5%	1/10W
R512	1-216-043-00	METAL CHIP	560	5%	1/10W
R513	1-216-033-00	METAL CHIP	220	5%	1/10W
R514	1-216-043-00	METAL CHIP	560	5%	1/10W
R515	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R516	1-216-074-00	METAL CHIP	11K	5%	1/10W
R517	1-216-077-00	METAL CHIP	15K	5%	1/10W
R518	1-216-077-00	METAL CHIP	15K	5%	1/10W
R519	1-216-025-00	METAL CHIP	100	5%	1/10W
R520	1-216-025-00	METAL CHIP	100	5%	1/10W
△R521	1-215-857-11	METAL OXIDE	10	5%	1W F
R522	1-216-097-00	METAL CHIP	100K	5%	1/10W
R524	1-216-081-00	METAL CHIP	22K	5%	1/10W
R525	1-216-001-00	METAL CHIP	10	5%	1/10W
R526	1-216-041-00	METAL CHIP	470	5%	1/10W
R527	1-216-041-00	METAL CHIP	470	5%	1/10W
R528	1-216-041-00	METAL CHIP	470	5%	1/10W
R529	1-216-041-00	METAL CHIP	470	5%	1/10W
R601	1-216-081-00	METAL CHIP	22K	5%	1/10W
R602	1-216-081-00	METAL CHIP	22K	5%	1/10W
R603	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R605	1-216-081-00	METAL CHIP	22K	5%	1/10W
R606	1-216-081-00	METAL CHIP	22K	5%	1/10W
R607	1-216-081-00	METAL CHIP	22K	5%	1/10W
R608	1-216-049-00	METAL CHIP	1K	5%	1/10W
R609	1-216-083-00	METAL CHIP	27K	5%	1/10W
R610	1-216-083-00	METAL CHIP	27K	5%	1/10W
R611	1-216-077-00	METAL CHIP	15K	5%	1/10W
R612	1-216-081-00	METAL CHIP	22K	5%	1/10W
R613	1-216-089-00	METAL CHIP	47K	5%	1/10W
R615	1-216-071-00	METAL CHIP	8.2K	5%	1/10W

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

MAIN	POWER	PANEL	CONNECTOR
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Ref. No.	Part No.	Description	Remarks		
R616	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R617	1-216-097-00	METAL CHIP	100K	5%	1/10W
R618	1-216-097-00	METAL CHIP	100K	5%	1/10W
R619	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R620	1-216-105-00	METAL CHIP	220K	5%	1/10W
R621	1-216-073-00	METAL CHIP	10K	5%	1/10W
R622	1-216-097-00	METAL CHIP	100K	5%	1/10W
R623	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R624	1-216-073-00	METAL CHIP	10K	5%	1/10W
R625	1-216-043-00	METAL CHIP	560	5%	1/10W
R626	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R627	1-216-091-00	METAL CHIP	56K	5%	1/10W
R628	1-216-073-00	METAL CHIP	10K	5%	1/10W
R629	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R630	1-216-081-00	METAL CHIP	22K	5%	1/10W
R631	1-216-081-00	METAL CHIP	22K	5%	1/10W
R632	1-216-081-00	METAL CHIP	22K	5%	1/10W
R633	1-216-025-00	METAL CHIP	100	5%	1/10W
R634	1-216-081-00	METAL CHIP	22K	5%	1/10W
R635	1-216-081-00	METAL CHIP	22K	5%	1/10W
R636	1-216-081-00	METAL CHIP	22K	5%	1/10W
R637	1-216-081-00	METAL CHIP	22K	5%	1/10W
R638	1-216-081-00	METAL CHIP	22K	5%	1/10W
R639	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R640	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R641	1-216-073-00	METAL CHIP	10K	5%	1/10W
R642	1-216-089-00	METAL CHIP	47K	5%	1/10W
R643	1-216-089-00	METAL CHIP	47K	5%	1/10W
R644	1-216-025-00	METAL CHIP	100	5%	1/10W
R645	1-216-089-00	METAL CHIP	47K	5%	1/10W
R646	1-216-081-00	METAL CHIP	22K	5%	1/10W
R647	1-216-025-00	METAL CHIP	100	5%	1/10W
R648	1-216-025-00	METAL CHIP	100	5%	1/10W
R649	1-216-025-00	METAL CHIP	100	5%	1/10W
R650	1-216-121-00	METAL CHIP	1M	5%	1/10W
R651	1-216-081-00	METAL CHIP	22K	5%	1/10W
R652	1-216-081-00	METAL CHIP	22K	5%	1/10W
R653	1-216-073-00	METAL CHIP	10K	5%	1/10W
R654	1-216-073-00	METAL CHIP	10K	5%	1/10W
R655	1-216-089-00	METAL CHIP	47K	5%	1/10W
R656	1-216-073-00	METAL CHIP	10K	5%	1/10W
R661	1-216-083-00	METAL CHIP	27K	5%	1/10W
R662	1-216-083-00	METAL CHIP	27K	5%	1/10W
R663	1-216-073-00	METAL CHIP	10K	5%	1/10W
R664	1-216-045-00	METAL CHIP	680	5%	1/10W
R665	1-216-073-00	METAL CHIP	10K	5%	1/10W
R666	1-216-045-00	METAL CHIP	680	5%	1/10W
R667	1-216-025-00	METAL CHIP	100	5%	1/10W
R668	1-216-090-00	METAL CHIP	51K	5%	1/10W
R669	1-216-089-00	METAL CHIP	47K	5%	1/10W

Ref. No.	Part No.	Description	Remarks		
R670	1-216-084-00	METAL CHIP	30K	5%	1/10W
R671	1-216-090-00	METAL CHIP	51K	5%	1/10W
R672	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R673	1-216-080-00	METAL CHIP	20K	5%	1/10W
R674	1-216-083-00	METAL CHIP	27K	5%	1/10W
R675	1-216-080-00	METAL CHIP	20K	5%	1/10W
R676	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R677	1-216-089-00	METAL CHIP	47K	5%	1/10W
R678	1-216-084-00	METAL CHIP	30K	5%	1/10W
R679	1-216-083-00	METAL CHIP	27K	5%	1/10W
R680	1-216-090-00	METAL CHIP	51K	5%	1/10W
R681	1-216-090-00	METAL CHIP	51K	5%	1/10W
R682	1-216-025-00	METAL CHIP	100	5%	1/10W
R683	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R684	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R685	1-216-025-00	METAL CHIP	100	5%	1/10W
R686	1-216-025-00	METAL CHIP	100	5%	1/10W
R687	1-216-081-00	METAL CHIP	22K	5%	1/10W
R689	1-216-025-00	METAL CHIP	100	5%	1/10W
R690	1-216-025-00	METAL CHIP	100	5%	1/10W
R691	1-216-025-00	METAL CHIP	100	5%	1/10W
R692	1-216-081-00	METAL CHIP	22K	5%	1/10W
R694	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R695	1-216-073-00	METAL CHIP	10K	5%	1/10W
R696	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R697	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R698	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R700	1-216-073-00	METAL CHIP	10K	5%	1/10W
R6002	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R6003	1-216-073-00	METAL CHIP	10K	5%	1/10W
R6004	1-216-089-00	METAL CHIP	47K	5%	1/10W
R6005	1-216-089-00	METAL CHIP	47K	5%	1/10W
R6010	1-216-049-00	METAL CHIP	1K	5%	1/10W
R6011	1-216-097-00	METAL CHIP	100K	5%	1/10W
R6012	1-216-049-00	METAL CHIP	1K	5%	1/10W
R6013	1-216-085-00	METAL CHIP	33K	5%	1/10W
R6014	1-216-079-00	METAL CHIP	18K	5%	1/10W
R6016	1-216-073-00	METAL CHIP	10K	5%	1/10W
R6017	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R6018	1-216-081-00	METAL CHIP	22K	5%	1/10W
R6050	1-216-025-00	METAL CHIP	100	5%	1/10W
R6061	1-216-081-00	METAL CHIP	22K	5%	1/10W
R6062	1-216-035-00	METAL CHIP	270	5%	1/10W
R6063	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R6070	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R6071	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

MAIN	POWER	PANEL	CONNECTOR	MD-A
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Ref. No.	Part No.	Description	Remarks
< VARIABLE RESISTOR >			
RV101	1-241-136-11	RES, ADJ, CARBON 10K	
RV201	1-241-136-11	RES, ADJ, CARBON 10K	
< SWITCH >			
S902	1-570-101-61	SWITCH, KEY BOARD (CD SYNCHRO)	
S903	1-554-303-21	SWITCH, TACTILE (DOLBY NR)	
S904	1-554-303-21	SWITCH, TACTILE (DUBBING MODE)	
S905	1-554-303-21	SWITCH, TACTILE (COUNTER RESET)	
S906	1-554-303-21	SWITCH, TACTILE (DISPLAY A/B)	
S907	1-554-303-21	SWITCH, TACTILE (DIRECTION MODE)	
S908	1-554-303-21	SWITCH, TACTILE (■ PAUSE) (DECK B)	
S909	1-554-303-21	SWITCH, TACTILE (● MUTE) (DECK B)	
S910	1-554-303-21	SWITCH, TACTILE (▶(AMS)) (DECK A)	
S911	1-554-303-21	SWITCH, TACTILE (◀(AMS)) (DECK A)	
S912	1-554-303-21	SWITCH, TACTILE (▶(AMS)) (DECK B)	
S913	1-554-303-21	SWITCH, TACTILE (◀(AMS)) (DECK B)	
S914	1-554-303-21	SWITCH, TACTILE (● REC) (DECK B)	
S915	1-554-303-21	SWITCH, TACTILE (▷) (DECK B)	
S916	1-554-303-21	SWITCH, TACTILE (◁) (DECK B)	
S917	1-554-303-21	SWITCH, TACTILE (■) (DECK B)	
S918	1-554-303-21	SWITCH, TACTILE (■) (DECK A)	
S919	1-554-303-21	SWITCH, TACTILE (▷) (DECK A)	
S920	1-554-303-21	SWITCH, TACTILE (◁) (DECK A)	
< TRANSFORMER >			
△T501	1-423-382-11	TRANSFORMER, POWER	
< VIBRATOR >			
X351	1-577-101-11	VIBRATOR, CERAMIC(4.19MHz)	
X601	1-577-358-21	VIBRATOR, CERAMIC(4.0MHz)	

*	A-2006-399-A	MD-A BOARD, COMPLETE(RA12A) (DECK A)	

< CAPACITOR >			
C11	1-163-131-00	CERAMIC CHIP 390PF	5% 50V
C12	1-136-157-00	FILM 0.022uF	5% 50V
C13	1-124-234-00	ELECT 22uF	20% 16V
C18	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C21	1-163-131-00	CERAMIC CHIP 390PF	5% 50V
C22	1-136-157-00	FILM 0.022uF	5% 50V
C23	1-124-234-00	ELECT 22uF	20% 16V
C28	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C31	1-124-234-00	ELECT 22uF	20% 16V
C32	1-124-234-00	ELECT 22uF	20% 16V
C72	1-124-499-11	ELECT, NONPOLAR 1uF	20% 50V

Ref. No.	Part No.	Description	Remarks
< JACK >			
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD	
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P	
< CONNECTOR >			
* CNP32	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P	
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	
< IC >			
IC31A	8-759-106-02	IC uPC4570G2	
< JUMPER RESISTOR >			
JR1	1-216-295-00	METAL CHIP	0 5% 1/10W
JR51	1-216-296-00	METAL CHIP	0 5% 1/8W
JR52	1-216-296-00	METAL CHIP	0 5% 1/8W
JR53	1-216-296-00	METAL CHIP	0 5% 1/8W
JR54	1-216-296-00	METAL CHIP	0 5% 1/8W
< TRANSISTOR >			
Q71A	8-729-602-36	TRANSISTOR 2SA1602	
< RESISTOR >			
R11	1-216-099-00	METAL CHIP	120K 5% 1/10W
R12	1-216-025-00	METAL CHIP	100 5% 1/10W
R13	1-216-100-00	METAL GLAZE	130K 5% 1/10W
R14	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R21	1-216-099-00	METAL CHIP	120K 5% 1/10W
R22	1-216-025-00	METAL CHIP	100 5% 1/10W
R23	1-216-100-00	METAL GLAZE	130K 5% 1/10W
R24	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R31	1-216-033-00	METAL CHIP	220 5% 1/10W
R32	1-216-033-00	METAL CHIP	220 5% 1/10W
R71	1-216-082-00	METAL GLAZE	24K 5% 1/10W
R72	1-216-081-00	METAL CHIP	22K 5% 1/10W
R73	1-216-089-00	METAL CHIP	47K 5% 1/10W
R74	1-216-089-00	METAL CHIP	47K 5% 1/10W
< VARIABLE RESISTOR >			
RV11A	1-241-627-11	RES, ADJ, CARBON 1K	
RV21A	1-241-627-11	RES, ADJ, CARBON 1K	
RV71A	1-241-630-11	RES, ADJ, CARBON 10K	
RV72A	1-241-630-11	RES, ADJ, CARBON 10K	

Ref. No.	Part No.	Description	Remarks
*	1-634-841-14	SW-A BOARD *****	
	3-343-419-01	HOLDER (S SENSER A) < CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P < IC >	
IC81A	8-719-710-03	DI ODE NJL5165K-B < RESISTOR >	
R84	1-249-417-11	CARBON 1K 5% 1/4W F	
R85	1-249-408-11	CARBON 180 5% 1/4W F	
		< SWITCH >	
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)	
S82	1-571-281-21	SWITCH, LEAF (CrO2 DET)	
S86	1-571-281-21	SWITCH, LEAF (HALF DET)	

*	A-2006-401-A	MD-B BOARD, COMPLETE(RB12A) (DECK B) *****	
		< CAPACITOR >	
C11	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	
C12	1-136-157-00	FILM 0.022uF 5% 50V	
C13	1-124-234-00	ELECT 22uF 20% 16V	
C18	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C21	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	
C22	1-136-157-00	FILM 0.022uF 5% 50V	
C23	1-124-234-00	ELECT 22uF 20% 16V	
C28	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C31	1-124-234-00	ELECT 22uF 20% 16V	
C32	1-124-234-00	ELECT 22uF 20% 16V	
C33	1-124-234-00	ELECT 22uF 20% 16V	
C51	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C52	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C53	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C54	1-136-601-11	FILM 0.01uF 5% 630V	
C56	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
C57	1-164-346-11	CERAMIC CHIP 1uF 16V	
C71	1-164-346-11	CERAMIC CHIP 1uF 16V	
C80	1-124-234-00	ELECT 22uF 20% 16V	
C81	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C82	1-136-157-00	FILM 0.022uF 5% 50V	
C83	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C84	1-136-478-11	FILM 470PF 5% 630V	
C85	1-136-433-11	FILM 100PF 5% 630V	
C86	1-163-143-00	CERAMIC CHIP 0.0012uF 5% 50V	

Ref. No.	Part No.	Description	Remarks
C87	1-136-273-91	FILM 75PF 5% 630V	
C88	1-163-003-11	CERAMIC CHIP 330PF 10% 50V	
C89	1-124-234-00	ELECT 22uF 20% 16V	
C90	1-107-045-00	MICA 3.9PF 500V	
C91	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C92	1-136-157-00	FILM 0.022uF 5% 50V	
C93	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C94	1-136-478-11	FILM 470PF 5% 630V	
C95	1-136-433-11	FILM 100PF 5% 630V	
C96	1-163-143-00	CERAMIC CHIP 0.0012uF 5% 50V	
C97	1-136-273-91	FILM 75PF 5% 630V	
C98	1-163-003-11	CERAMIC CHIP 330PF 10% 50V	
C99	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
		< CONNECTOR >	
* CNP31	1-580-782-11	CONNECTOR, BOARD TO BOARD	
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P	
* CNP33	1-580-782-11	CONNECTOR, BOARD TO BOARD	
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	
* CNP72	1-580-411-11	SOCKET, CONNECTOR 4P	
		< DIODE >	
D31B	8-719-016-74	DIODE 1SS352	
		< IC >	
IC31B	8-759-106-02	IC uPC4570G2	
IC81B	8-759-106-56	IC uPC1297CA	
		< COIL >	
L81	1-410-780-11	INDUCTOR 27mH	
L91	1-410-780-11	INDUCTOR 27mH	
		< TRANSISTOR >	
Q51B	8-729-808-01	TRANSISTOR 2SD1622-S	
Q52B	8-729-808-01	TRANSISTOR 2SD1622-S	
Q53B	8-729-808-01	TRANSISTOR 2SD1622-S	
Q71B	8-729-216-22	TRANSISTOR 2SA1162	
		< RESISTOR >	
R11	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R12	1-216-025-00	METAL CHIP 100 5% 1/10W	
R13	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
R14	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R21	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R22	1-216-025-00	METAL CHIP 100 5% 1/10W	
R23	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
R24	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R31	1-216-033-00	METAL CHIP 220 5% 1/10W	
R32	1-216-033-00	METAL CHIP 220 5% 1/10W	
R51	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R52	1-216-097-00	METAL CHIP 100K 5% 1/10W	

MD-B

SW-B

Ref. No.	Part No.	Description	Remarks
R53	1-216-073-00	METAL CHIP 10K 5%	1/10W
R54	1-216-309-00	METAL CHIP 5.6 5%	1/10W
R55	1-216-309-00	METAL CHIP 5.6 5%	1/10W
R57	1-216-298-00	METAL CHIP 2.2 5%	1/10W
R71	1-216-082-00	METAL GLAZE 24K 5%	1/10W
R72	1-216-081-00	METAL CHIP 22K 5%	1/10W
R73	1-216-089-00	METAL CHIP 47K 5%	1/10W
R74	1-216-089-00	METAL CHIP 47K 5%	1/10W
R81	1-216-073-00	METAL CHIP 10K 5%	1/10W
R82	1-216-085-00	METAL CHIP 33K 5%	1/10W
R83	1-216-001-00	METAL CHIP 10 5%	1/10W
R84	1-216-101-00	METAL CHIP 150K 5%	1/10W
R85	1-216-075-00	METAL CHIP 12K 5%	1/10W
< VARIABLE RESISTOR >			
RV11B	1-241-627-11	RES, ADJ, CARBON 1K	
RV21B	1-241-627-11	RES, ADJ, CARBON 1K	
RV71B	1-241-630-11	RES, ADJ, CARBON 10K	
RV72B	1-241-630-11	RES, ADJ, CARBON 10K	
RV81B	1-241-122-11	RES, ADJ, CARBON 22K	
RV91B	1-241-122-11	RES, ADJ, CARBON 22K	
< RELAY >			
RY31B	1-515-913-11	RELAY	
< TRANSFORMER >			
T51	1-406-417-11	COIL, BIAS OSCILLATION	
T81	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR	
T91	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR	
< CONNECTOR >			
* TP81	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P	

*	1-634-841-14	SW-B BOARD	

	3-343-419-01	HOLDER (S SENSER A)	
< CONNECTOR >			
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	

Ref. No.	Part No.	Description	Remarks
< IC >			
IC81B	8-719-710-03	DI ODE	NJL5165K-B
< RESISTOR >			
R81	1-249-414-11	CARBON 560 5%	1/4W F
R82	1-247-818-11	CARBON 300 5%	1/4W
R83	1-247-834-11	CARBON 1.3K 5%	1/4W
R84	1-249-417-11	CARBON 1K 5%	1/4W F
R85	1-249-408-11	CARBON 180 5%	1/4W F
< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)	
S82	1-571-281-21	SWITCH, LEAF (CrO2 DET)	
S83	1-571-281-21	SWITCH, LEAF (METAL DET)	
S84	1-571-281-21	SWITCH, LEAF (ERASE PROOF(SIDE A))	
S85	1-571-281-21	SWITCH, LEAF (ERASE PROOF(SIDE B))	
S86	1-571-281-21	SWITCH, LEAF (HALF DET)	

MISCELLANEOUS

64	1-690-880-41	LEAD (WITH CONNECTOR)
68	1-590-902-11	WIRE, FLAT TYPE (9 CORE)
69	1-696-748-11	WIRE (FLAT TYPE) (19 CORE)
117	1-638-983-11	PC BOARD, MOTOR FLEXIBLE
HP101	A-2003-837-F	BASE ASSY, HEAD(DECK A)
HRP101	A-2003-838-A	BASE ASSY, HEAD(DECK B)
M101A	X-3363-501-1	MOTOR(REEL MOTOR) ASSY(DECK A)
M101B	X-3363-501-1	MOTOR(REEL MOTOR) ASSY(DECK B)
M102A	X-3359-417-1	MOTOR(CAPSTAN MOTOR) ASSY(DECK A)
M102B	X-3359-417-1	MOTOR(CAPSTAN MOTOR) ASSY(DECK B)

HARDWARE LIST

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#2	7-621-255-15	SCREW +PTT 2X3 (S)
#4	7-621-770-67	SCREW +PTT 2.6X6 (S)
#5	7-627-556-08	SCREW +P 2.6X2.8
#6	7-621-775-00	SCREW +B 2.6X3
#8	7-621-849-00	SCREW, TAPPING