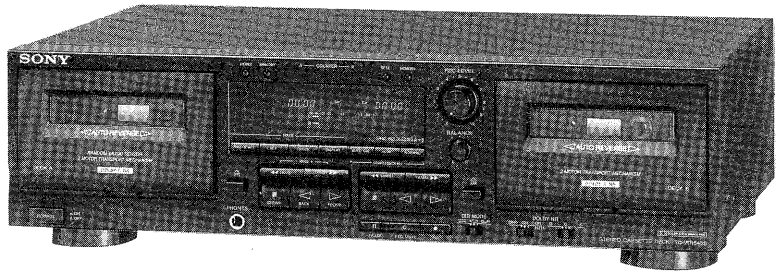
TC-WR645S

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model



Model Name Using Similar Mechanism		TC-WR635S
Tape Transport Machanism Type	DECK A	TCM-190RA12CL
	DECK B	TCM-190RB12C7

SPECIFICATIONS

Recording system 4-track 2-channel stereo
Fast winding time Approx. 90 sec. (with Sony C-60 cassette)
Bias AC bias
Signal-to-noise ratio (at peak level and weighted)

Cassette (Dolby NR OFF)	Type IV	Type II	Type I
	58 dB	57 dB	55 dB

S/N ratio improvement (approximate values)
with Dolby B NR on: 5 dB at 1 kHz; 10 dB at 5 kHz
with Dolby C NR on: 15 dB at 500 Hz; 20 dB at 1 kHz
with Dolby S NR on: 10 dB at 100 Hz; 24 dB at 1 kHz

Harmonic distortion 0.4 % (with Sony Type I, 160 nWb/m, 315 Hz, 3rd H.D.)
1.8 % (with Sony Type IV, 250 nWb/m, 315 Hz, 3rd H.D.)

Frequency response (Dolby NR OFF)

Type IV cassette	30 - 18,000 Hz (±3 dB, IEC) 30 - 13,000 Hz [±3 dB (–4 dB) recording]
Type II cassette	30 - 17,000 Hz (±3 dB, IEC)
Type I cassette	30 - 15,000 Hz (±3 dB, IEC)

Type IV: Sony Type IV (METAL)
Type II: Sony Type II (HIGH)
Type I: Sony Type I (NORMAL)

Wow and flutter ± 0.13 % W.Peak (IEC)
0.07 % W.RMS (NAB)
± 0.18 % W.Peak (DIN)

Inputs

Line inputs (phono jacks)	Sensitivity	0.16 V
	Input impedance	47 k ohms

Outputs

Line outputs (phono jacks)	Rated output level	0.5 V at a load impedance of 47 k ohms
	Load impedance	Over 10 k ohms
Headphones (stereo phone jack)	Output level	1 mW at a load impedance of 32 ohms

General

Power requirements
US, Canadian model : 120V AC, 60Hz
AEP, German model : 220-230V AC, 50/60Hz
UK model : 240V AC, 50Hz
E model : 120, 220 or 240V AC adjustable, 50/60Hz
Australian model : 240V AC, 50/60Hz

Power consumption 29 W
Dimensions Approx. 430 × 123 × 290 mm (w/h/d) (17 × 4 7/8 × 11 1/2 inches) including projecting parts and controls
Mass Approx. 4.5 kg (9 lbs 15 oz)

Supplied accessories

Audio connecting cords (2)

Remote commander RM-J902 (Canadian model only)

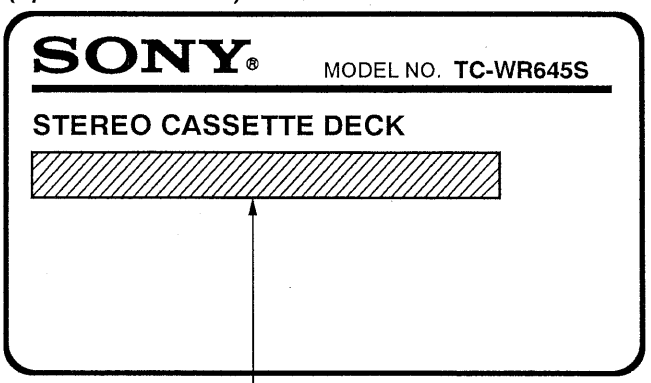
Design and specifications subject to change without notice.

STEREO CASSETTE DECK

SONY®

TABLE OF CONTENTS

MODEL IDENTIFICATION
(Specification Label)



US, Canadian model : AC 120V 60Hz
UK model : AC 240V 50Hz
Australian model : AC 240V~50/60Hz
AEP, German model : AC 220-230V~50/60Hz
E model : AC120, 220, 240V~50/60Hz

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

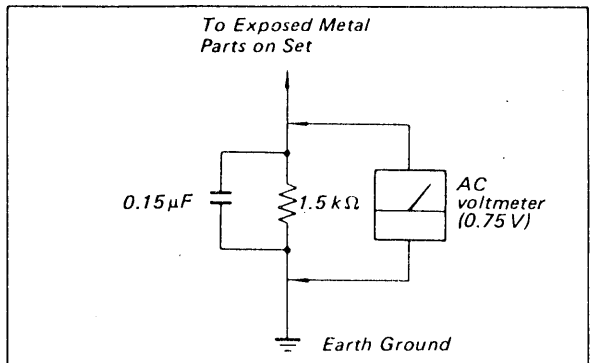


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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.

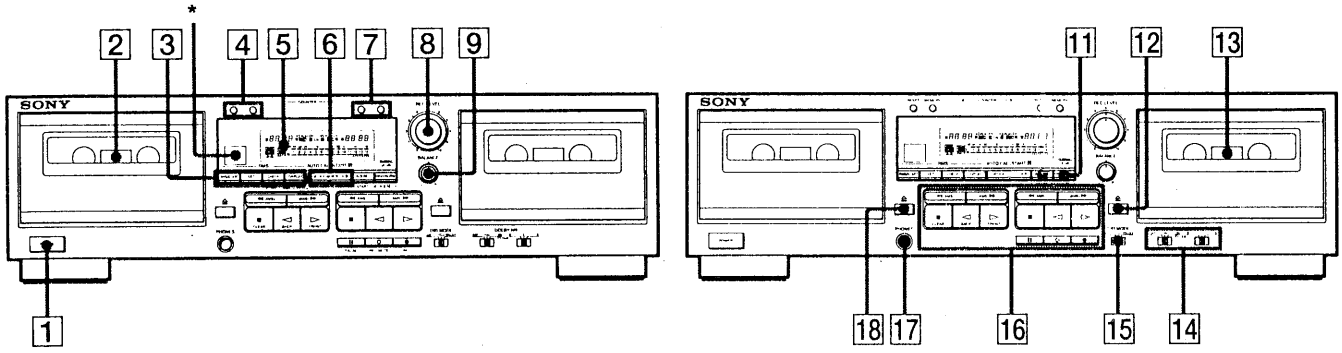
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. IDENTIFYING THE PARTS



Front Panel

For details, refer to the page number(s) indicated in parentheses.

1 POWER switch
2 Deck A
3 RMS** operation buttons
RMS/START button
SET button
CHECK button
DISPLAY button
4 COUNTER buttons (deck A)
RESET button
MEMORY button
5 Display panel
6 AUTO CAL button
7 COUNTER buttons (deck B)
RESET button
MEMORY button
8 REC (recording) LEVEL control
9 BALANCE control

* Remote control sensor
You can remotely control this cassette deck with:
— A remote commander that came with a Sony amplifier or receiver if it has the R mark and cassette deck control capability.
— Any optional Sony remote commander with the R mark and cassette deck control capability.

** Random Music Sensor

11 SYNCHRO DUBBING buttons
HIGH button
NORMAL button
12 ⏏ (eject) button (deck B)
13 Deck B
14 DOLBY NR switches
OFF/ON/FILTER ON switch
B/C/S switch
15 DIR (direction) MODE switch
16 Tape operation buttons
◀◀ (leftward fastwinding)/AMS***/RMS**–button
▶▶ (rightward fastwinding)/AMS***/RMS**+button
■ (stop)/(RMS**) CLEAR button
◁ (reverse play)/(RMS**) BACK button
▷ (forward play)/(RMS**) FRONT button
❚❚ PAUSE button
O REC MUTE (record muting) button
● REC (recording) button
17 PHONES jack (stereo phone jack)
18 ⏏ (eject) button (deck A)

** Random Music Sensor

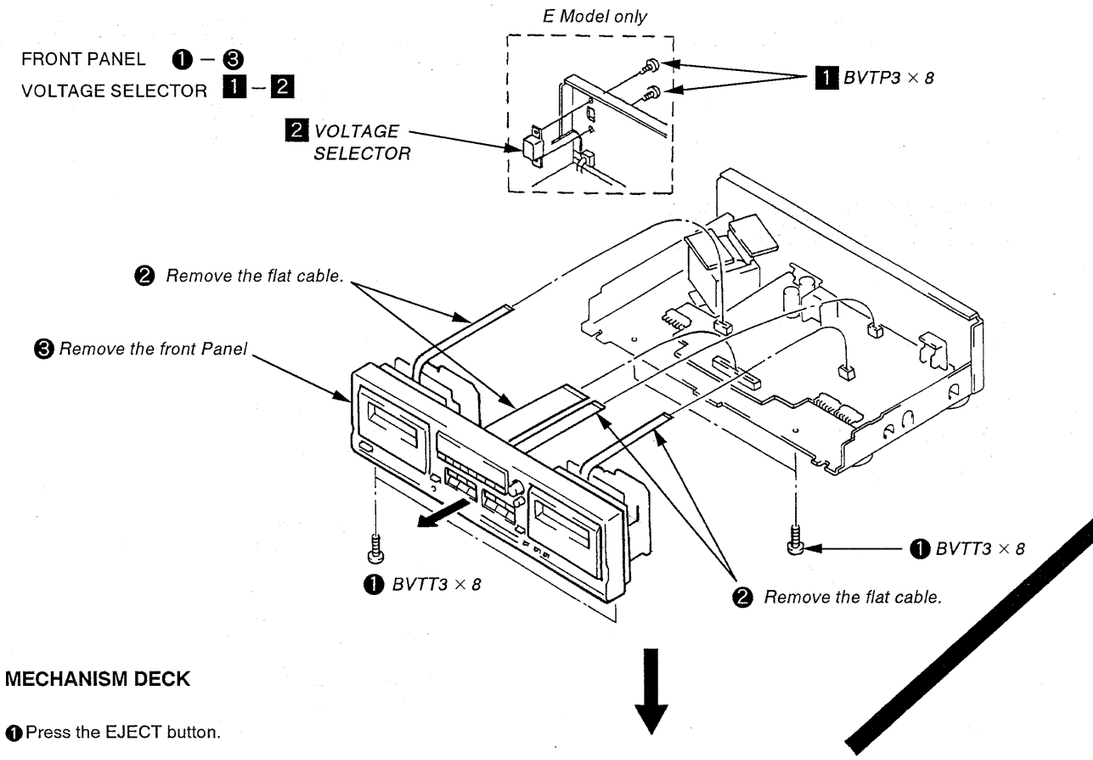
*** Automatic Music Sensor

SECTION 2
DISASSEMBLY

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

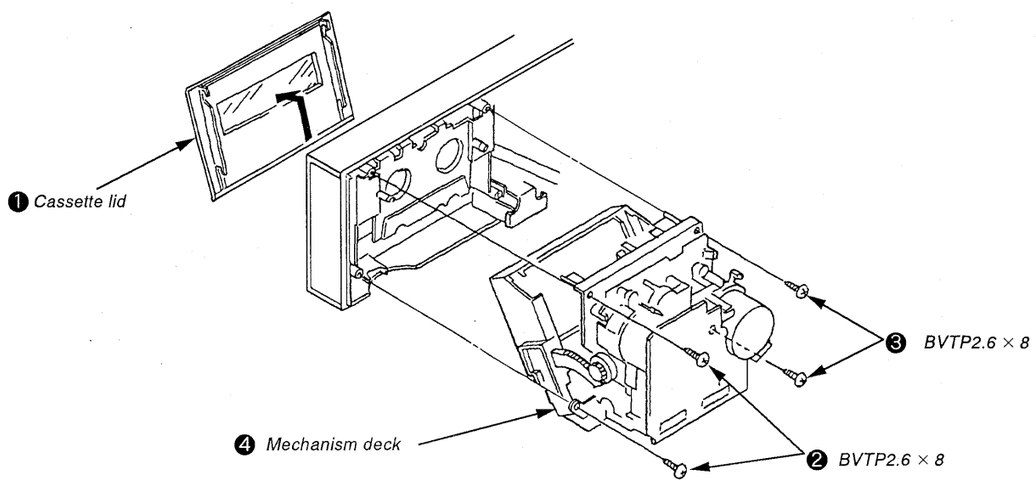
CASE
Unscrew the four case attachment screws M3 × 8 and remove the case.

2-1. FRONT PANEL

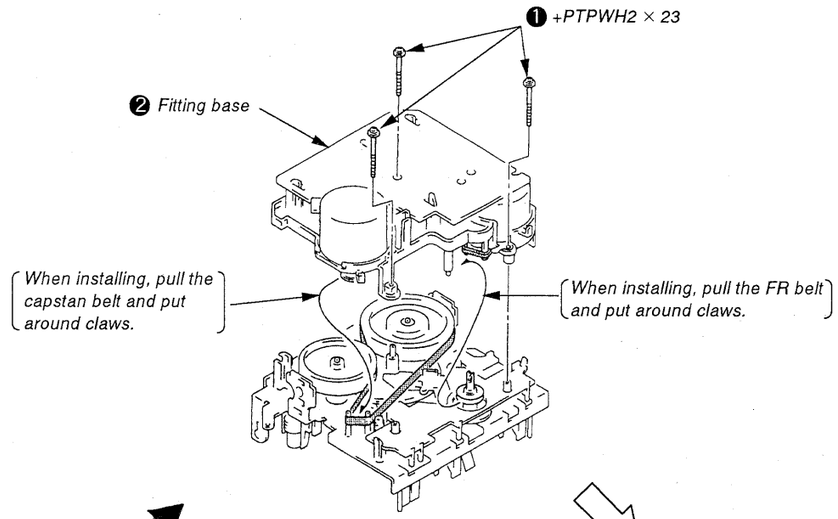


2-2. MECHANISM DECK

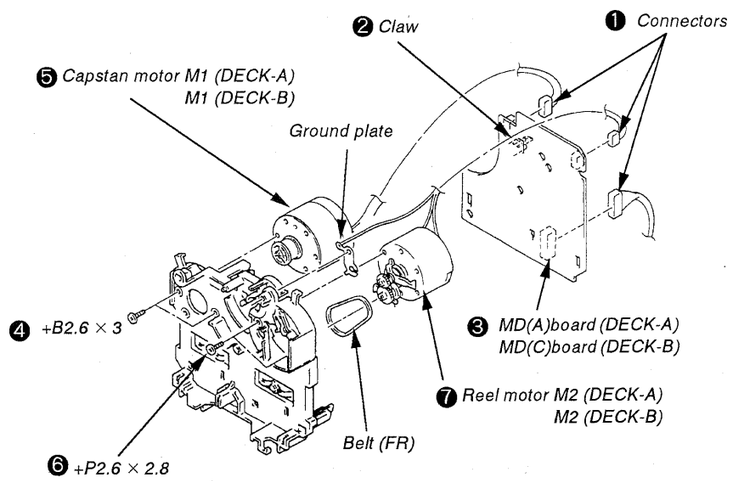
❶ Press the EJECT button.



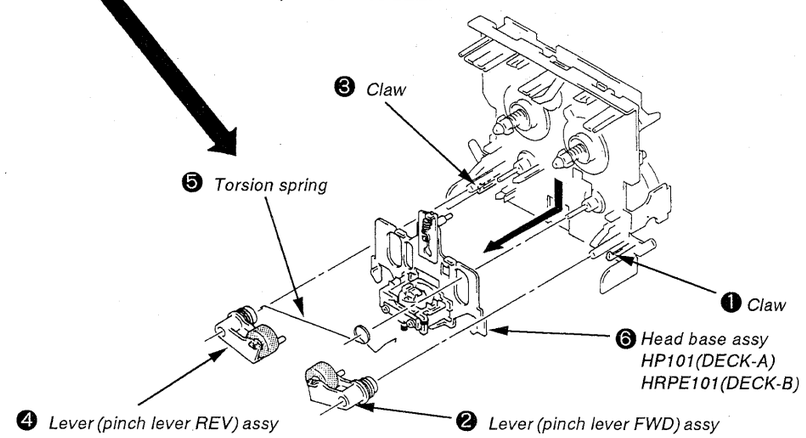
2-3. CAPSTAN MOTOR, REEL MOTOR



Remove the cassette holder



2-4. HEAD, PINCH ROLLER



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:
   record/playback/erase head pinch roller
   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

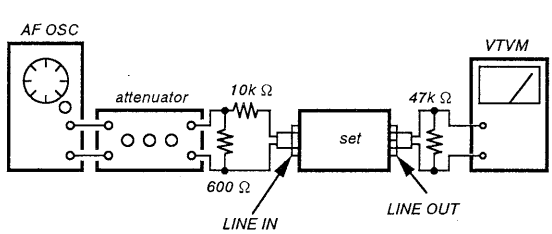
Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 60g • cm (0.42 to 0.83oz • inch)
Forward back tension	CQ-102C	1 to 5g • cm (0.014 to 0.069 oz • inch)
Reverse	CQ-102RC	30 to 60g • cm (0.42 to 0.83 oz • inch)
Reverse back tension	CQ-102RC	1 to 5g • cm (0.014 to 0.069 oz • inch)
FF/REW	CQ-201B	65 to 90g•cm (0.903 to 1.24 oz•inch)

3-2. ELECTRICAL ADJUSTMENTS

PRECAUTION

1. The adjustment should be performed in the publication. (Be sure to male playback adjustment at first.)
2. The adjustments and measurement should be performed for both L-CH and R-CH.
   - Switch position
     DOLBY NR switch : OFF
     DIR MODE switch : ⇄
   - Standard record position :
     Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

– Record Mode –



Standard Input Level

Input terminal	LINE IN
source impedance	10k Ω
input signal level	0.5V (– 3.8dB)

Standard Output Level

Output terminal	LINE OUT
load impedance	47k Ω
output signal level	0.5V (– 3.8dB)

Test Tape

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

0dB=0.775V

Test Mode

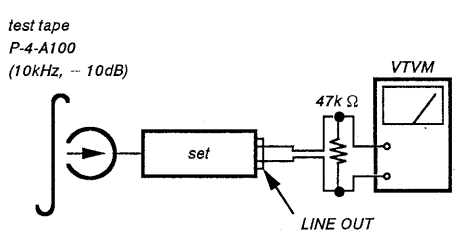
1. Insert a short-circuit plug into TP801 (2P) and turn ON the power switch. (Earth pin ㊹ of IC801 and turn ON the power switch.)
   At first, all the fluorescent tubes light up, then the system returns to normal display.
2. To release the test mode, remove the short plug and turn off the power switch.
3. Remove the short plug after completion of adjustment.

Record/Playback Head Azimuth Adjustment

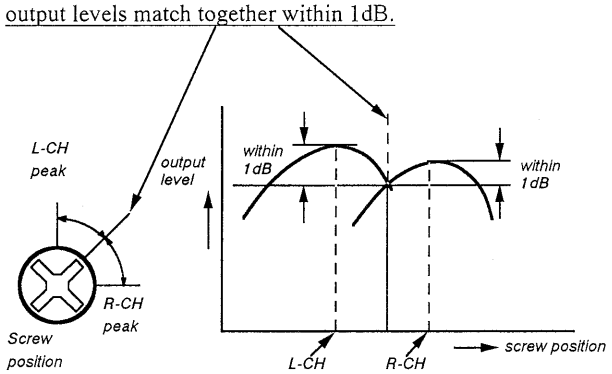
DECK-A DECK-B

Procedure :

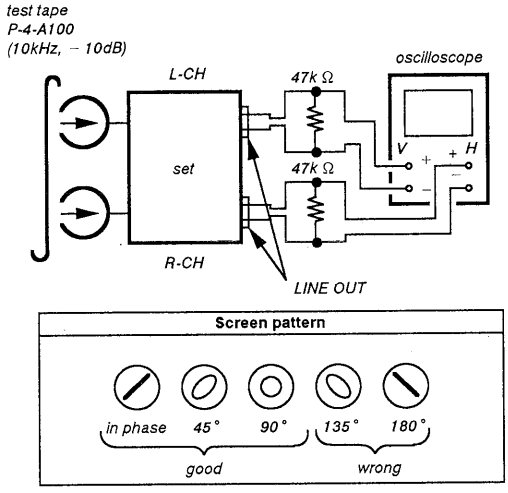
1. Forward playback Mode



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.

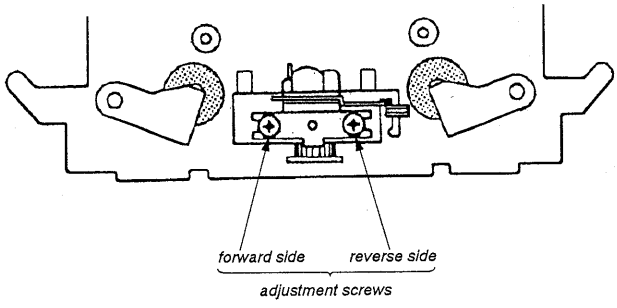


3. Playback Mode



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

Adjustment Location : – record/playback head –

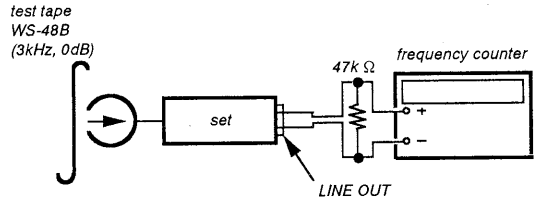


Tape Speed Adjustment

DECK-A DECK-B

Procedure :

– Forward Playback Mode –



(high speed adjustment)

1. Connect ㊹ pin of IC801 to ground.
2. Set to FWD playback mode.
3. Keep on pressing the HIGH SPEED DUBBING switch.
4. Adjust RV72 so that the frequency counter reading becomes 6,000 ± 20Hz.

(normal speed adjustment)

1. Set to FWD playback mode.
2. Adjust RV71 so that the frequency counter reeding becomes 3,000 ± 10Hz.

Frequency difference between the beginning and the end of the tape should be within 3%.
Frequency difference between the deck A and deck B the beginning of the tape should be within 1.5%.

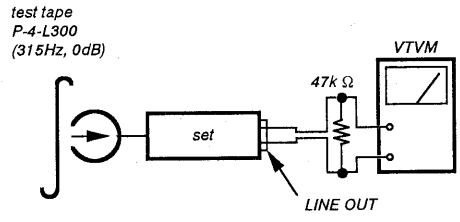
Adjustment Location : AUDIO board

Playback Level Adjustment

DECK-A DECK-B

Procedure :

– Forward Playback Mode –



Adjust RV11(L-CH) and RV21(R-CH) so the VTVM reading becomes the adjustment limits below.

Adjustment Value :

LINE OUT level : – 7.7 ± 0.5dB (0.301 to 0.338V)

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.

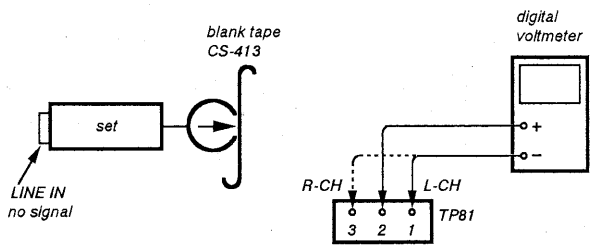
Adjustment Location : AUDIO board

Bias Consumption Current Adjustment DECK-B

This adjustment should be performed when replacing the head assy or the bias oscillating transformer (T81, T91).

Procedure :

( ) : R-CH



1. Connect the digital voltmeter to test point TP81.
2. Set RV81 (RV91) to mechanical center.
3. Set to FWD record mode.
4. Adjust T81 (T91) so that the digital voltmeter reading becomes minimum.

Adjustment Value : Maximum 220mV

Adjustment Location : AUDIO board

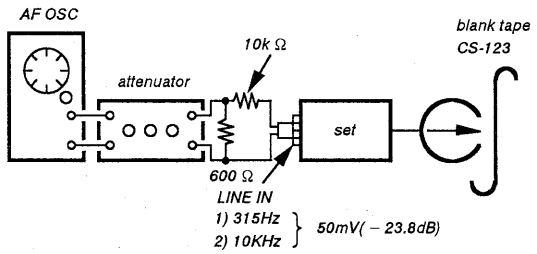
Record Bias Adjustment DECK-B

Setting :

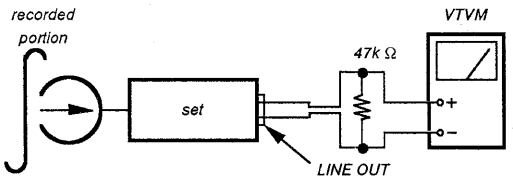
REC LEVEL control : standard record position (Refer to page 7.)

Procedure :

1. Record Mode



2. Playback Mode



Confirm that the 10kHz playback output is 0 ± 0.5dB relative to the 315Hz output. If necessary, adjust RV81(L-CH), RV91(R-CH) and repeat the steps given above.

Adjustment Location : AUDIO board

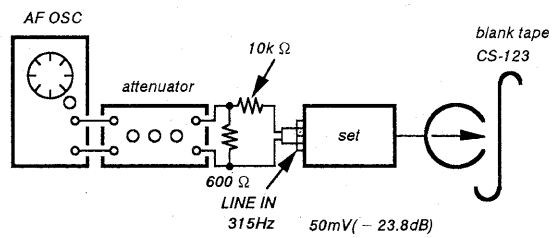
Record Level Adjustment DECK-B

Setting :

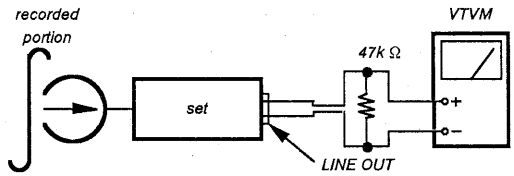
REC LEVEL control : standard record position (Refer to page 7.)

Procedure :

1. Record Mode



2. Playback Mode



Confirm playback the tape recorded become adjustment level as follows.

If necessary, adjust RV102(L-CH), RV202(R-CH) and repeat the steps 1 and 2.

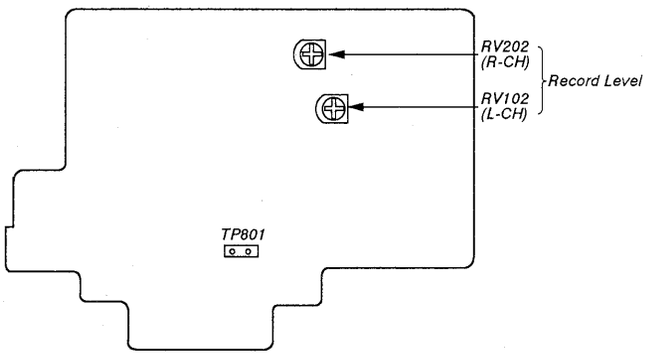
Adjustment Value :

LINE OUT level : – 23.8 ± 0.5dB (47.2 to 53mV)

Adjustment Location : MAIN board

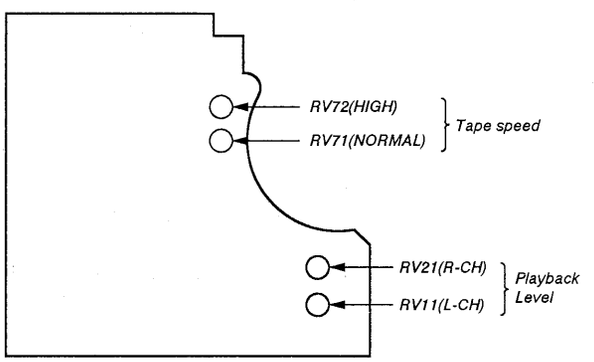
– Adjustment Parts Location Diagrams –

【MAIN BOARD】



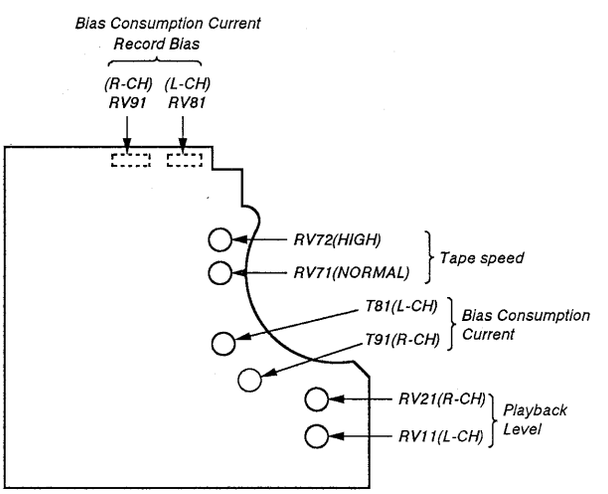
DECK A :

【AUDIO BOARD】



DECK B :

【AUDIO BOARD】



SECTION 4
EXPLANATION OF IC TERMINALS

IC801 CXP82220-016Q

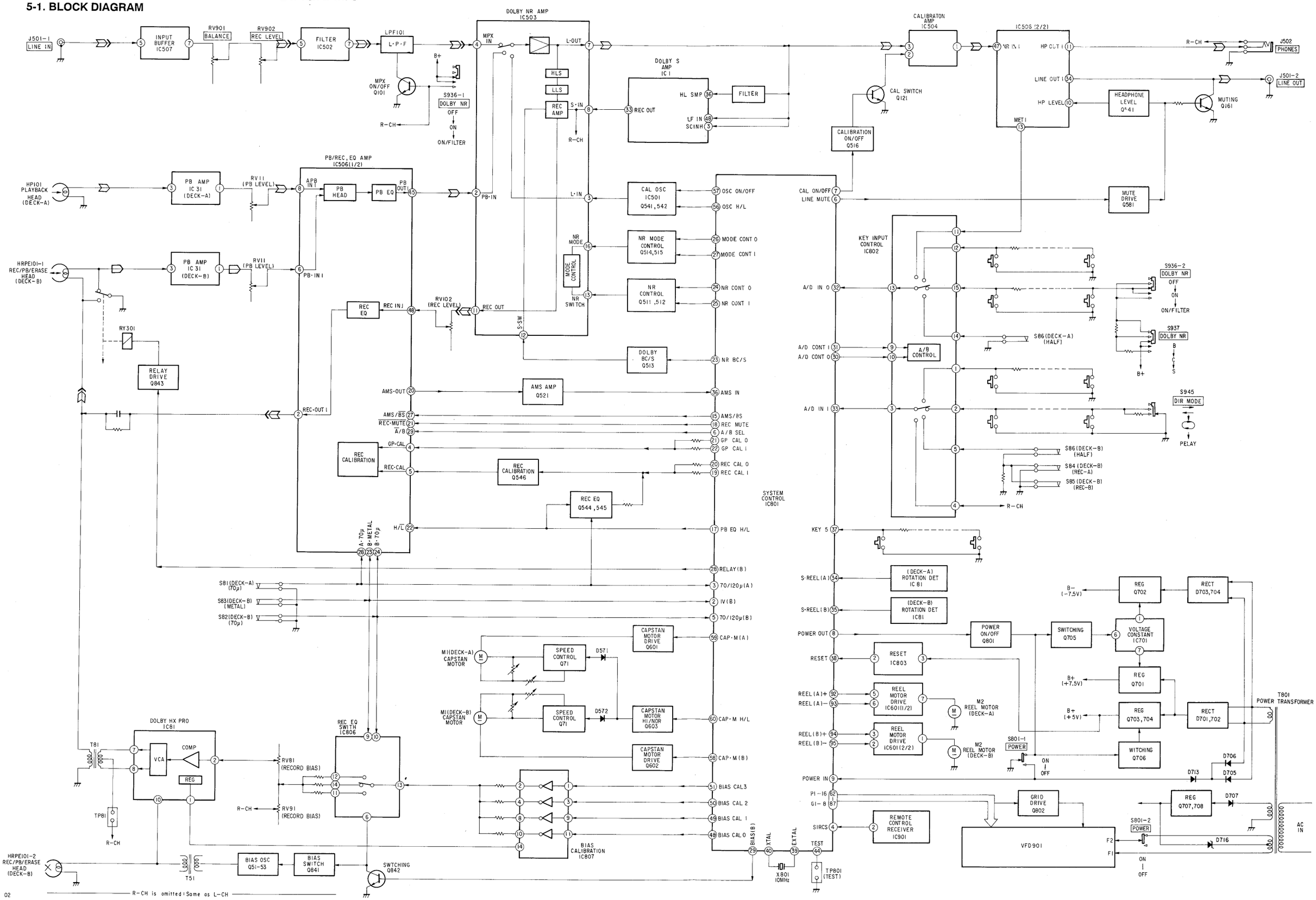
Pin No.	Pin name	I/O	Description
1	IV (A)	I	DECK-A METAL tape selector. (LEAF SW)
2	IV (B)	I	DECK-B METAL tape selector. (LEAF SW)
3	70/120 μ (A)	I	DECK-A 70/$\overline{120\mu}$ tape selector. (LEAF SW)
4	SIRCS	I	SIRCS signal in terminal.
5	70/120 μ (B)	I	DECK-B 70/$\overline{120\mu}$ tape selector. (LEAF SW)
6	A/B SEL	O	A/B selector. "L" : DECK-A, "H" : DECK-B
7	CAL ON/OFF	O	Calibrarion $\overline{ON}$ /OFF control. "L" : ON
8	POWER OUT	O	Power ON/OFF DET.
9	POWER IN	I	Power OFF DET. OFF : 0V
10	REC MUTE (A)	O	Recording mute ON/OFF control. "L" : ON
11	REC CAL0 (A)	O	Recording calibration. "H" : ON
12	REC CAL1 (A)	O	Recording calibration. "H" : ON
13	GP CAL0 (A)	O	GP calibration terminal.
14	GP CAL1 (A)	O	GP calibration terminal.
15	AMS/BS	O	AMS/$\overline{BS}$ selector. "L" : BS ON
16	DIR•SW(A)	I	Direction SW (A) input terminal.
17	PB EQ H/L	O	Playback EQ H/$\overline{L}$ selector.
18	RE MUTE (B)	O	Recording mute ON/OFF control. "L" : ON
19	REC CAL0 (B)	O	Recording calibration. "H" : ON
20	REC CAL1 (B)	O	Recording calibration. "H" : ON
21	GP CAL0 (B)	O	GP calibration terminal.
22	GP CAL1 (B)	O	GP calibration terminal.
23	NR BC/S	O	Dolby NR $\overline{BC}$/S selector.
24	NR CONT0	O	Dolby NR control terminal.
25	NR CONT1	O	Dolby NR control terminal.
26	MODE CONT0	O	Mode control terminal.
27	MODE CONT1	O	Mode control terminal.
28	RELAY (B)	O	Recording/playback selector at DECK-B.
29	BIAS (B)	O	Bias ON/OFF at DECK-B.
30	AD CONT0	O	A/D control.
31	AD CONT1	O	A/D control.
32	A/D IN0	I	A/D input terminal.
33	A/D IN1	I	A/D input terminal.
34	S•REEL (A)	I	S-side reel rotation detection at DECK-A.
35	S•REEL (B)	I	S-side reel rotation detection at DECK-B.
36	AMS IN	I	AMS signal input terminal.
37	KEY 5	I	Key 5 input.
38	$\overline{RESET}$	I	Reset terminal.
39	EXTAL	O	System clock output terminal. (10MHz)
40	XTAL	I	System clock input terminal. (10MHz)

Pin No.	Pin name	I/O	Description
41	Vss	I	Power supply (GND)
42	TX	I	Connected to GND.
43	TEX	I	Connected to GND.
44	TEST	I	Test mode terminal. "L" : Test mode
45	NC	–	Connected to GND.
46	AVREF	–	AVREF terminal connected to +5V.
47	AVss	–	GND.
48	BIAS CAL0 (B)	O	EQ Bias calibration terminal. (DECK-B)
49	BIAS CAL1 (B)	O	EQ Bias calibration terminal. (DECK-B)
50	BIAS CAL2 (B)	O	EQ Bias calibration terminal. (DECK-B)
51	BIAS CAL3 (B)	O	EQ Bias calibration terminal. (DECK-B)
52	BIAS CAL0 (A)	O	EQ Bias calibration terminal. (DECK-A)
53	BIAS CAL1 (A)	O	EQ Bias calibration terminal. (DECK-A)
54	BIAS CAL2 (A)	O	EQ Bias calibration terminal. (DECK-A)
55	BIAS CAL3 (A)	O	EQ Bias calibration terminal. (DECK-A)
56	OSC H/L	O	OSC $\overline{H}$/L control.
57	OSC ON/OFF	O	OSC ON/OFF control.
58	CAP • M (B)	O	Capstan motor at DECK-B.
59	CAP • M (A)	O	Capstan motor at DECK-A.
60	CAP • M H/L	O	Capstan motor speed selector.
61	LINE MUTE	O	Line mute control.
62	P16	O	VFD Segment drive.
63	P15	O	VFD Segment drive.
64	P14	O	VFD Segment drive.
65	P13	O	VFD Segment drive.
66	P12	O	VFD Segment drive.
67	P11	O	VFD Segment drive.
68	P10	O	VFD Segment drive.
69	P9	O	VFD Segment drive.
70	P8	O	VFD Segment drive.
71	P7	O	VFD Segment drive.
72	P6	O	VFD Segment drive.
73	P5	O	VFD Segment drive.
74	P4	O	VFD Segment drive.
75	P3	O	VFD Segment drive.
76	P2	O	VFD Segment drive.
77	P1	O	VFD Segment drive.
78	G1	O	VFD Grid drive.
79	G2	O	VFD Grid drive.
80	G3	O	VFD Grid drive.

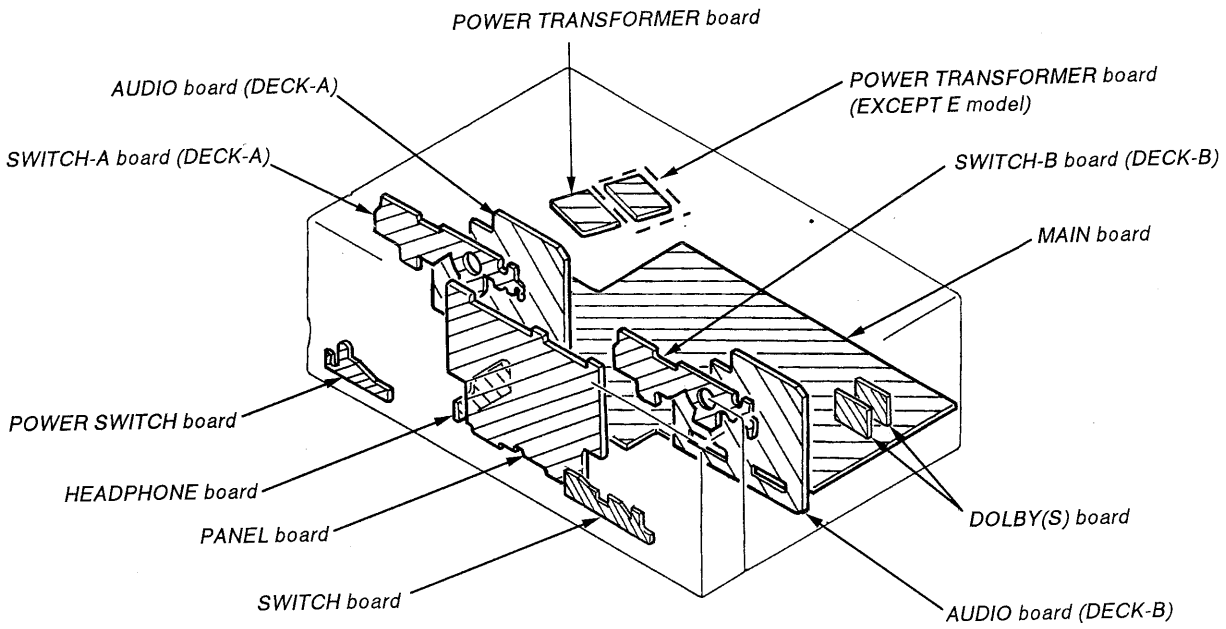
Pin No.	Pin name	I/O	Description
81	G4	O	VFD Grid drive.
82	G5	O	VFD Grid drive.
83	G6	O	VFD Grid drive.
84	G7	O	VFD Grid drive.
85	G8	O	VFD Grid drive.
86	G6, G7	O	VFD Grid drive.
87	G7, G8	O	VFD Grid drive.
88	VFDP	–	VFD Power.
89	V_{DD}	–	Power supply (+5V)
90	NC	–	Connected to +5V
91	V_{SS}	–	Power supply (GND)
92	REEL (A) +	O	Reel motor (+) output at DECK-A.
93	REEL (A) –	O	Reel motor (–) output at DECK-A.
94	REEL (B) +	O	Reel motor (+) output at DECK-B.
95	REEL (B) –	O	Reel motor (–) output at DECK-B.
96	BIAS (A)	O	Bias ON/OFF at DECK-A.
97	RELAY (A)	O	Recording/playback selector at DECK-A.
98	DIR•SW (B)	I	Direction SW(B) input terminal.
99	STOP SW(B)	I	Mechanism stop switch input for DECK-B.
100	STOP SW(A)	I	Mechanism stop switch input for DECK-A.

SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM

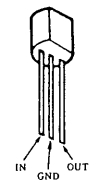


5-2. CIRCUIT BOARD LOCATION

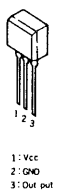


● SEMICONDUCTOR LEAD LAYOUTS

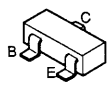
PST600E-T



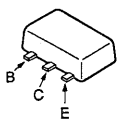
RST572E



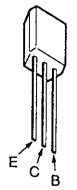
2SA1162-G
2SA1235-F
2SA1602



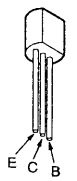
2SD1622-S



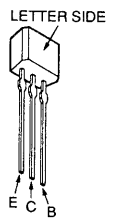
DTA144ES
DTC114ES
DTC143TS
2SA1317-STU
2SC2603-EF
2SD2144S-UVW



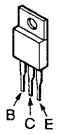
2SB1116A-L
2SD1387



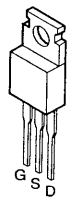
2SA1175-HFE



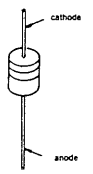
2SB1094-LK
2SD2012



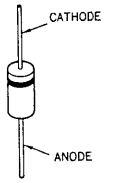
2SD2394-EF



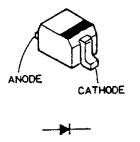
HZS6A1L
HZS7A2L
UZL-7L2
1SS120
11ES2



1N4148M
10E2N



1SS352



5-3. PRINTED WIRING BOARDS (MAIN SECTION)

• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D151	G - 19	Q101	E - 16
D251	H - 18	Q121	D - 17
D501	B - 14	Q181	B - 18
D502	B - 14	Q201	C - 18
D511	C - 14	Q221	C - 17
D512	D - 14	Q281	B - 19
D513	C - 14	Q501	B - 14
D514	D - 14	Q502	B - 14
D541	F - 18	Q511	E - 13
D571	H - 24	Q512	E - 13
D572	H - 14	Q513	E - 13
D701	B - 24	Q514	D - 13
D702	B - 24	Q515	E - 13
D703	C - 23	Q516	E - 17
D704	C - 23	Q521	F - 24
D705	B - 24	Q522	E - 23
D706	B - 24	Q523	F - 21
D707	D - 23	Q541	D - 20
D708	B - 20	Q542	F - 17
D709	B - 21	Q544	F - 18
D710	B - 21	Q545	F - 18
D711	C - 22	Q546	F - 17
D712	B - 23	Q581	B - 19
D713	B - 24	Q601	I - 24
D714	D - 23	Q602	I - 23
D715	D - 22	Q603	I - 23
D716	D - 23	Q701	A - 22
D801	I - 21	Q702	C - 21
D802	I - 21	Q703	A - 22
D803	I - 21	Q704	B - 23
D804	I - 21	Q705	B - 22
		Q706	B - 23
IC501	B - 13	Q707	D - 23
IC502	B - 17	Q708	D - 23
IC503	D - 15	Q801	F - 23
IC504	D - 17		
IC505	E - 22	Q802	J - 21
		Q821	G - 25
IC508	D - 19	Q822	G - 26
IC507	B - 16	Q823	F - 25
IC601	H - 23	Q841	G - 15
IC701	B - 22		
IC801	H - 20	Q842	G - 15
		Q843	G - 15
IC802	G - 18		
IC803	G - 19		
IC804	G - 25		
IC805	G - 24		
IC808	G - 15		
IC807	H - 16		
IC901	J - 28		

(DECK-A)

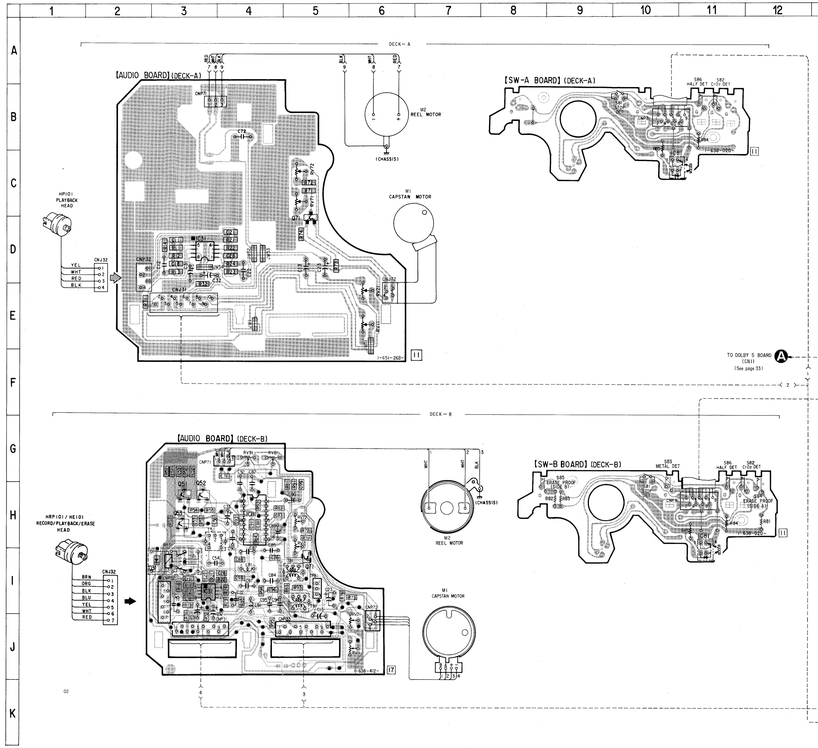
Ref. No.	Location
IC31	D - 3
IC81	C - 10
Q71	D - 5

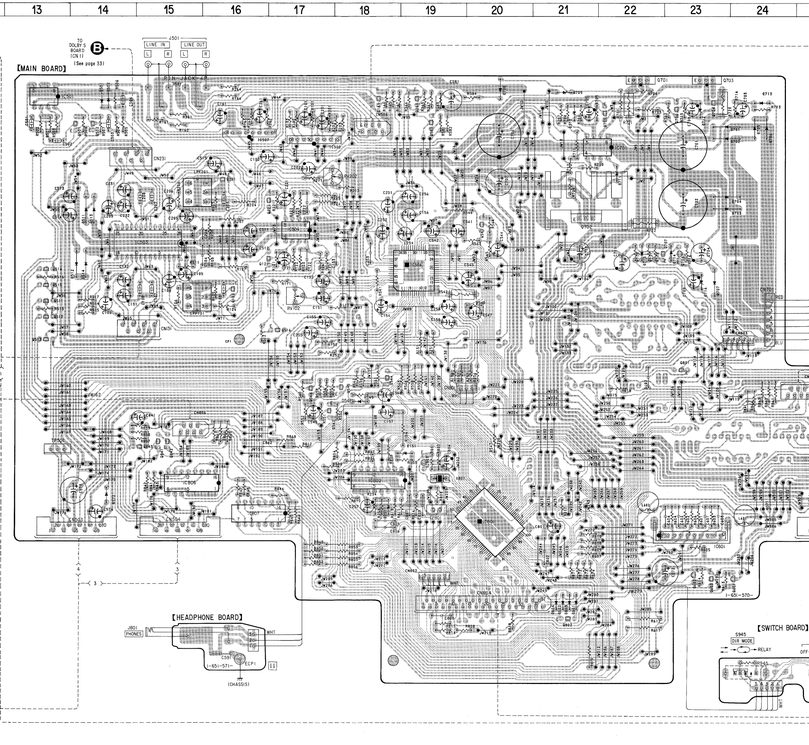
(DECK-B)

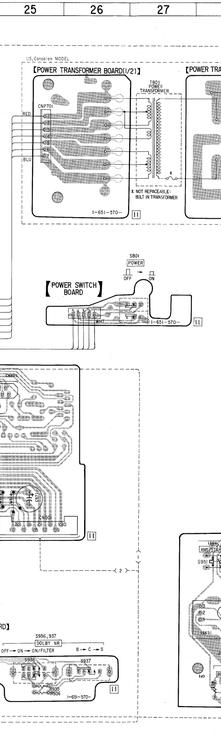
Ref. No.	Location
D31	I - 3
IC31	I - 3
IC81	H - 4 (AUDIO) I - 11 (SW-A)
Q51	H - 3
Q52	H - 3
Q53	H - 3
Q71	I - 5

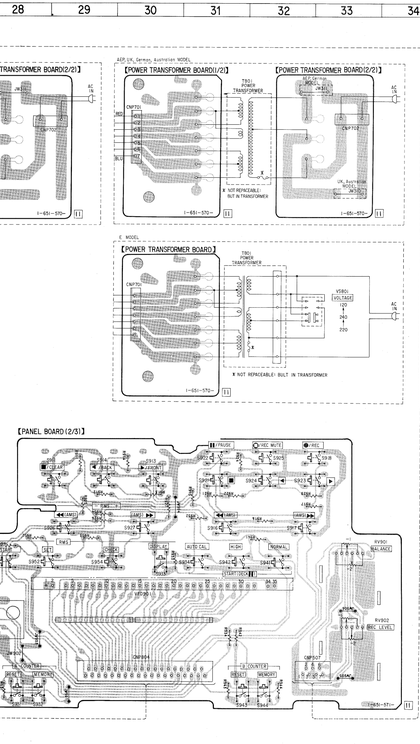
Note:

- ○— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒▒▒ : Pattern on the side which is seen.
- ▒▒▒ : Pattern of the rear side.
- G : German
  AUS : Australian

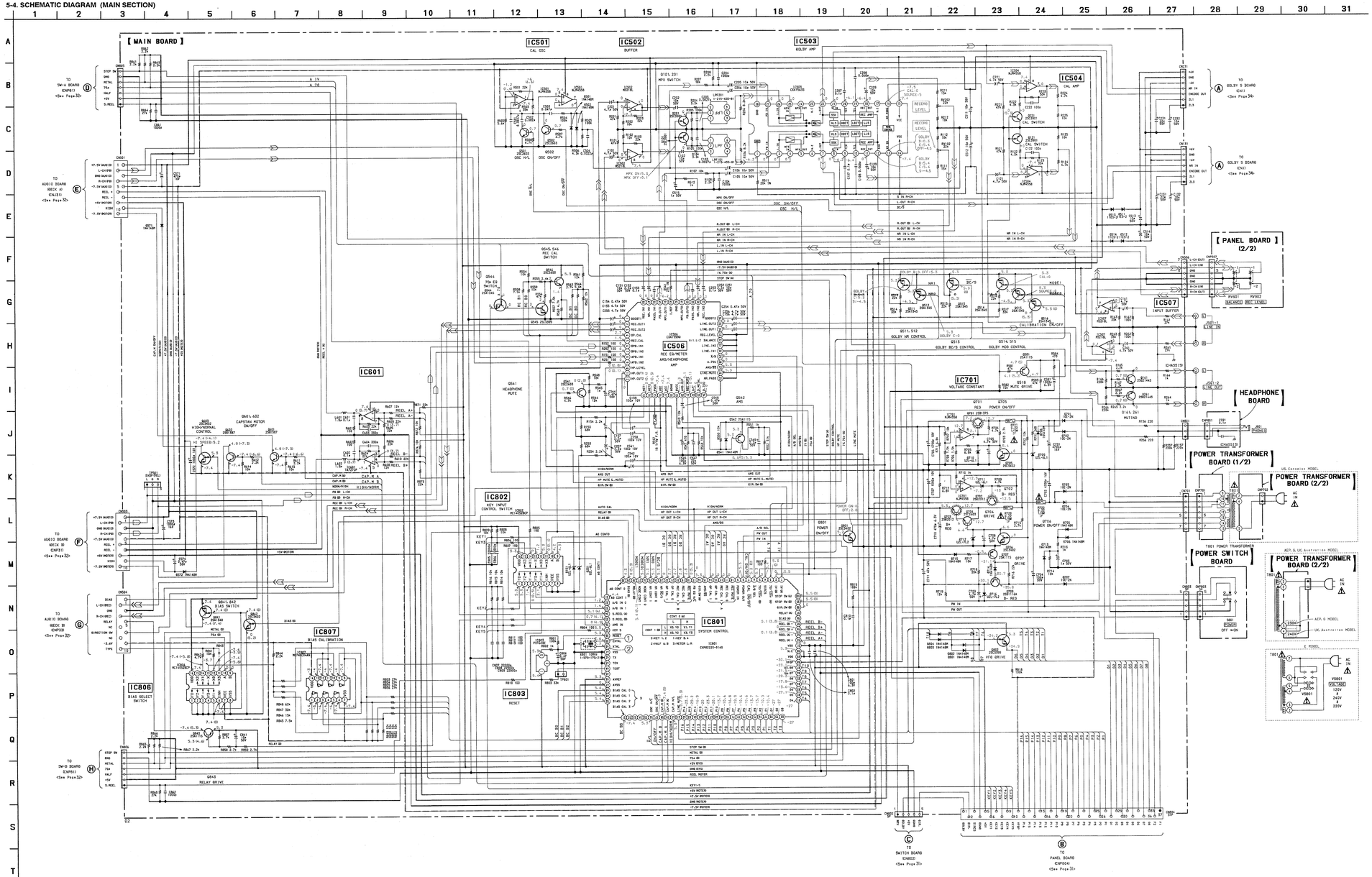




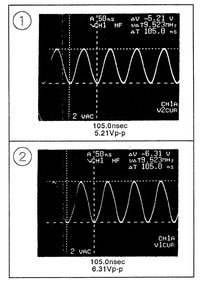




5-4. SCHEMATIC DIAGRAM (MAIN SECTION)



• WAVEFORMS



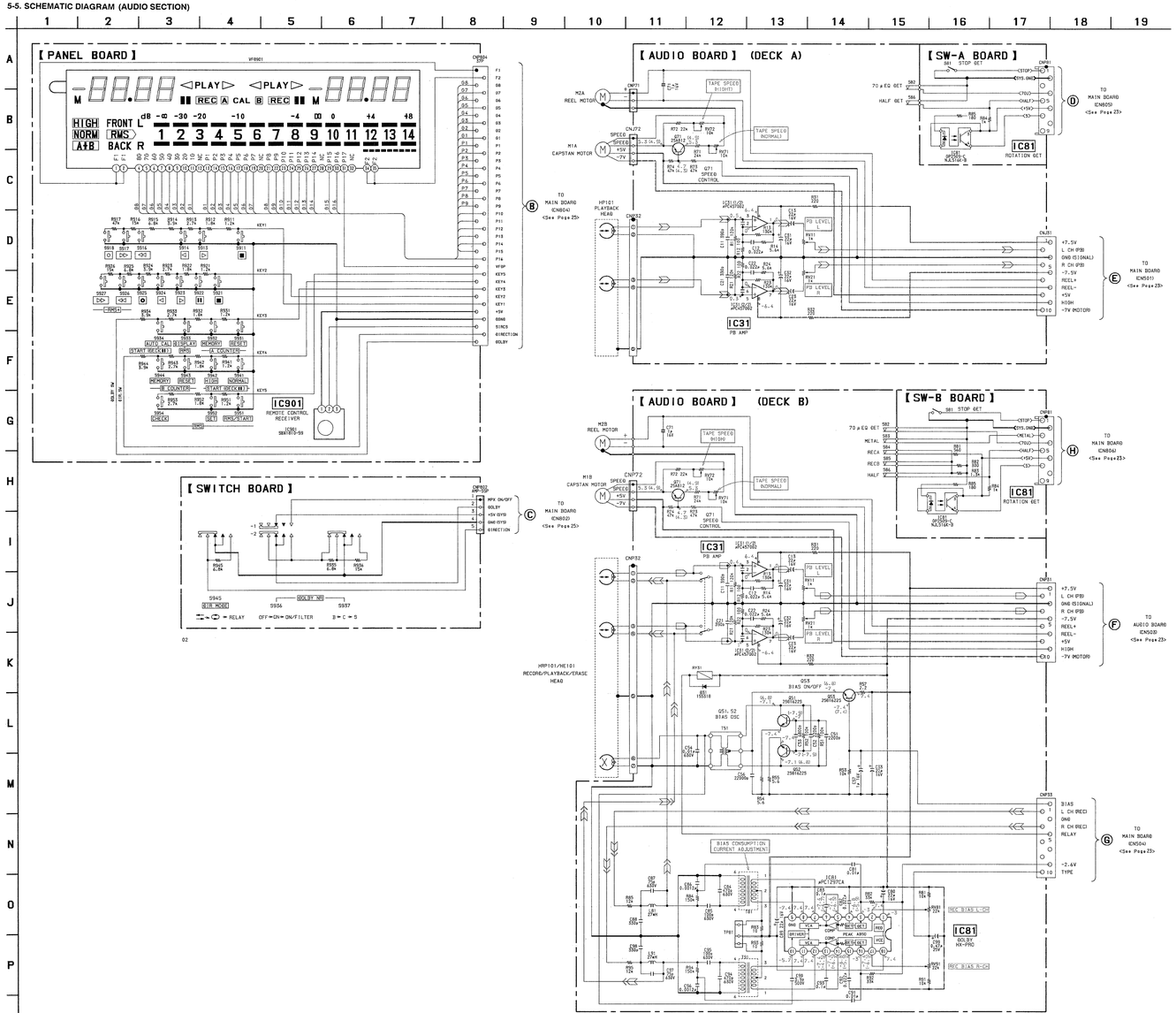
Note :

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantaliums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- ⚠ : internal component.
- : fusible resistor.

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- : B+ Line
- : B− Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : FM : PB (DECK A)
  : REC (DECK B)
  : PB (DECK B)
- G : German
  AUS : Australian

5-5. SCHEMATIC DIAGRAM (AUDIO SECTION)



Note :

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantaliums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ⚠ : fusible resistor.

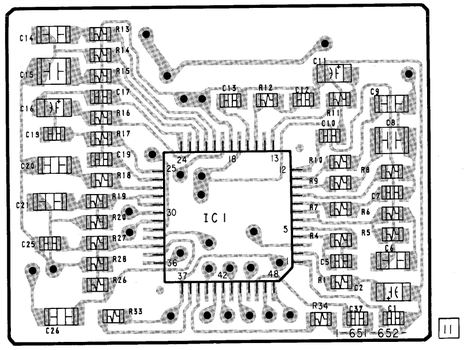
Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Note : Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▭▭▭ : B+ Line
- ▭▭▭ : B− Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM ⇨ : PB (DECK A)
  ⇨ : REC (DECK B)
  ⇨ : PB (DECK B)
- G : German
  AUS : Australian

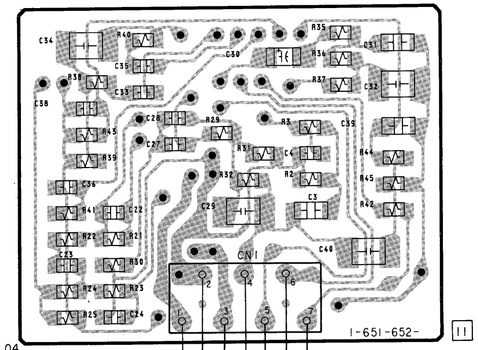
5-6. PRINTED WIRING BOARDS (DOLBY (S) SECTION)

● Refer to page 18 for Note.
● Refer to page 16 for Semiconductor Lead Layouts.

【DOLBY(S) BOARD】(A SIDE)



【DOLBY(S) BOARD】(B SIDE)

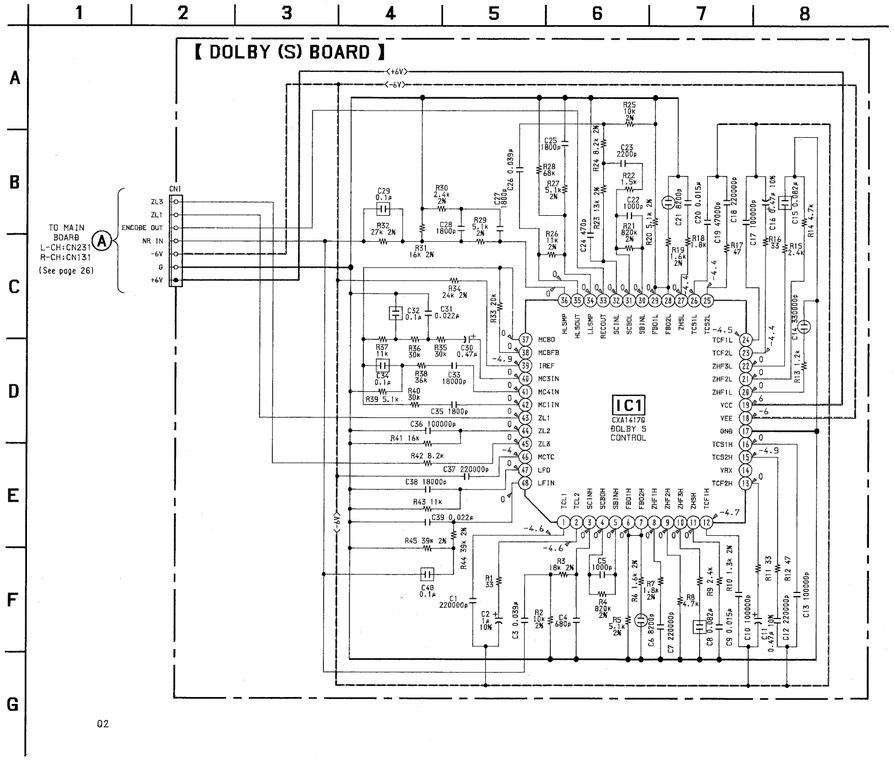


To MAIN BOARD
Ⓐ (CN131):R-CH
Ⓑ (CN231):L-CH
(See page 20)

5-7. SCHEMATIC DIAGRAM (DOLBY (S) SECTION)

● Refer to page 27 for Note.

【 DOLBY (S) BOARD 】



SECTION 6
EXPLODED VIEWS

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts Example :
  KNOB, BALANCE (WHITE)....(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

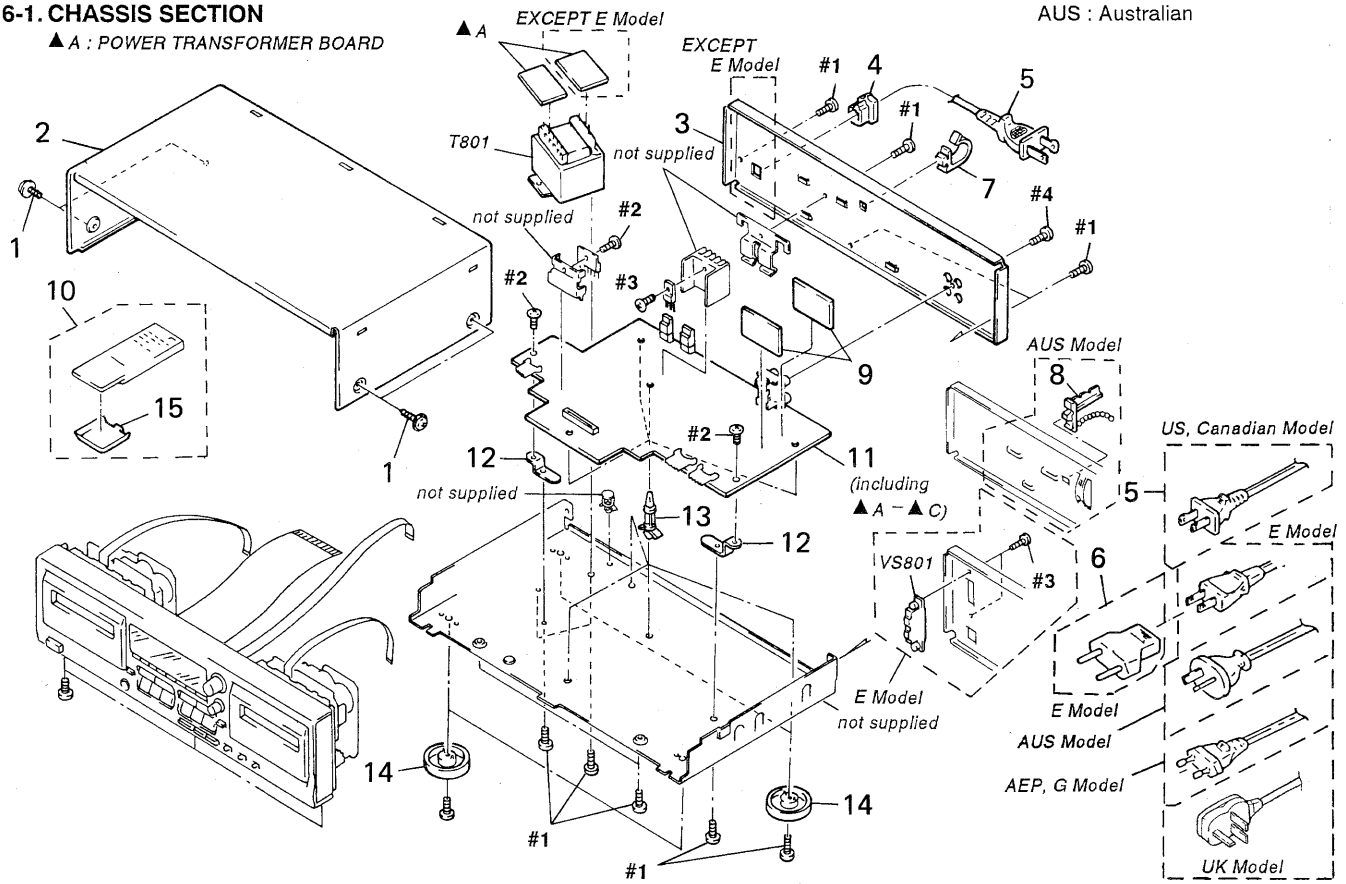
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Abbreviations
  G : German
  AUS : Australian

6-1. CHASSIS SECTION

▲A : POWER TRANSFORMER BOARD

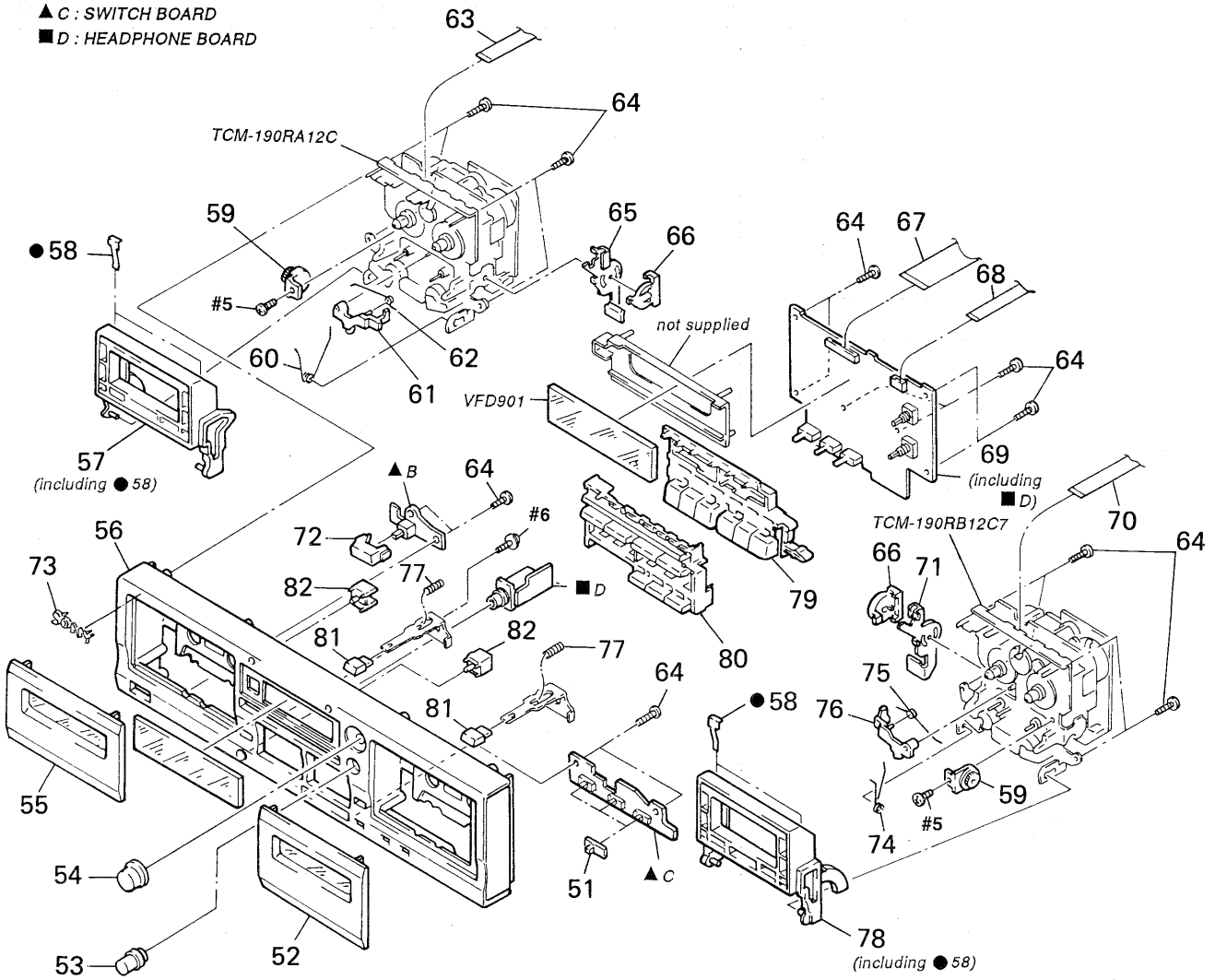


Ref. No.	Part No.	Description	Remark
1	3-704-366-01	SCREW (CASE) (M3X8)	
2	3-332-578-61	CASE	
* 3	3-910-808-01	PANEL, BACK(US, Canadian)	
* 3	3-910-808-11	PANEL, BACK(AEP, German)	
* 3	3-910-808-21	PANEL, BACK(UK, Australian)	
* 3	3-910-808-31	PANEL, BACK(E)	
* 4	3-703-244-00	BUSHING (2104), CORD (AEP, UK, German, Australian)	
* 4	3-703-571-11	BUSHING (S) (4516), CORD(US, Canadian, E)	
⚠5	1-551-188-XX	CORD, POWER(E)	
⚠5	1-558-945-21	CORD, POWER (POLAR. SPT-1) (US, Canadian)	
⚠5	1-575-651-21	CORD, POWER(AEP, German)	
⚠5	1-696-586-11	CORD, POWER(UK)	
⚠5	1-696-845-11	CORD, POWER(Australian)	
⚠6	1-569-007-11	ADAPTER, CONVERSION 2P(E)	
* 7	4-949-235-01	HOOK(US, Canadian, AEP, E, German)	
8	4-956-370-02	BAND, PLUG FIXED(Australian)	

Ref. No.	Part No.	Description	Remark
* 9	A-2007-173-A	DOLBY (S) BOARD, COMPLETE	
10	1-465-738-11	REMOTE COMMANDER(RM-J902) (Canadian)	
* 11	A-2007-172-A	MAIN BOARD, COMPLETE (US, Canadian, AEP, German)	
11	A-2007-176-A	MAIN BOARD, COMPLETE(UK, Australian)	
* 11	A-2007-177-A	MAIN BOARD, COMPLETE(E)	
* 12	3-332-563-01	BRACKET (P)	
* 13	3-346-265-11	HOLDER, PC BOARD	
14	4-956-885-01	FOOT (F58175S2W) (US, Canadian)	
14	4-956-885-11	FOOT (F58175S2W) (AEP, UK, E, German, Australian)	
15	2-181-754-21	COVER, BATTERY(Canadian)	
⚠T801	1-450-837-61	TRANSFORMER, POWER(US, Canadian)	
⚠T801	1-450-838-61	TRANSFORMER, POWER (AEP, UK, German, Australian)	
⚠T801	1-450-839-31	TRANSFORMER, POWER(E)	
⚠VS801	1-692-155-11	SELECTOR, POWER VOLTAGE(E)	

6-2. FRONT PANEL SECTION

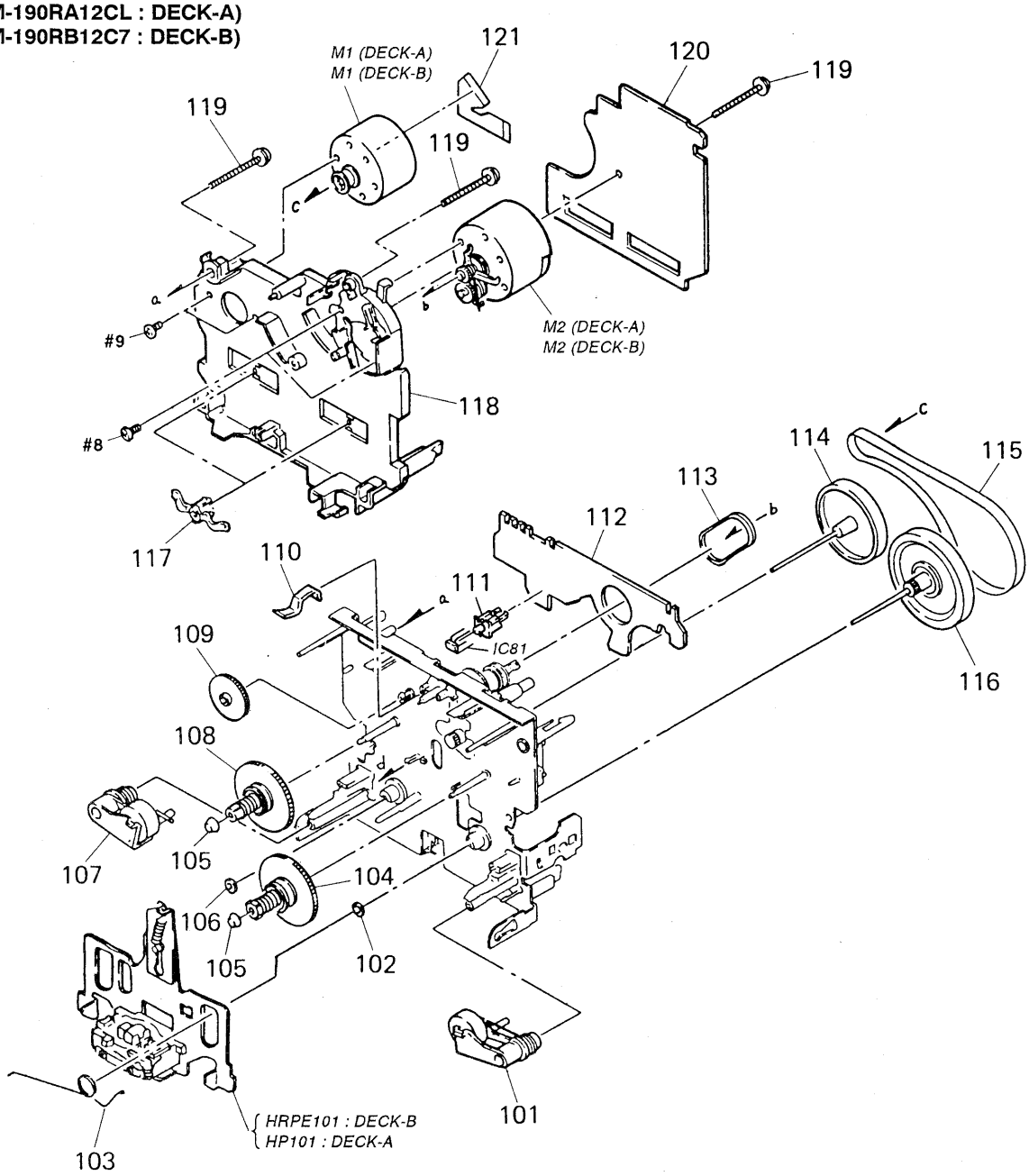
▲ B : POWER SWITCH BOARD
▲ C : SWITCH BOARD
■ D : HEADPHONE BOARD



Ref. No.	Part No.	Description	Remark
51	3-350-138-11	KNOB (SLIDE) (US, Canadian, AEP, UK, E, German)	
52	X-3367-922-1	LID (B) ASSY, CASSETTE	
53	3-367-431-01	KNOB (BAL)	
54	3-909-661-11	KNOB (REC)	
55	X-3367-921-1	LID (A) ASSY, CASSETTE	
56	X-3367-917-1	PANEL ASSY, FRONT (US)	
56	X-3367-918-1	PANEL ASSY, FRONT (AEP, UK, E, German, Australian)	
56	X-3368-336-1	PANEL ASSY, FRONT (Canadian)	
57	A-4325-164-A	HOLDER (R) ASSY, CASSETTE	
58	3-308-823-11	DETENT, CASSETTE	
59	3-354-963-01	DAMPER	
60	3-354-960-01	SPRING (LOADING R), TORSION	
61	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
62	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
63	1-590-209-21	WIRE (FLAT TYPE) (7 CORE)	
64	4-951-620-01	SCREW (2.6X8), +BVTP	

Ref. No.	Part No.	Description	Remark
* 65	3-354-954-01	LEVER (LOCK LEVER R)	
66	3-354-957-01	JOINT (LOCK LEVER)	
67	1-765-406-11	WIRE (FLAT TYPE) (37 CORE)	
68	1-590-963-11	WIRE (FLAT TYPE) (7 CORE)	
* 69	A-2007-175-A	PANEL BOARD, COMPLETE	
70	1-690-420-11	WIRE, FLAT TYPE (7 CORE)	
* 71	3-354-953-01	LEVER (LOCK LEVER L)	
72	3-354-932-01	BUTTON (POWER)	
73	4-925-334-11	EMBLEM (5-A), SONY	
74	3-354-959-01	SPRING (LOADING L), TORSION	
75	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
76	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
77	3-382-382-01	SPRING, COMPRESSION	
78	A-4325-163-A	HOLDER (L) ASSY, CASSETTE	
79	3-910-810-01	BUTTON (FR-J)	
80	3-910-811-01	BUTTON (SR-J)	
81	3-377-328-01	BUTTON (EJECT)	
82	3-377-329-11	BUTTON (COUNTER)	
VFD901	1-517-263-11	INDICATOR TUBE, FLUORESCENT	

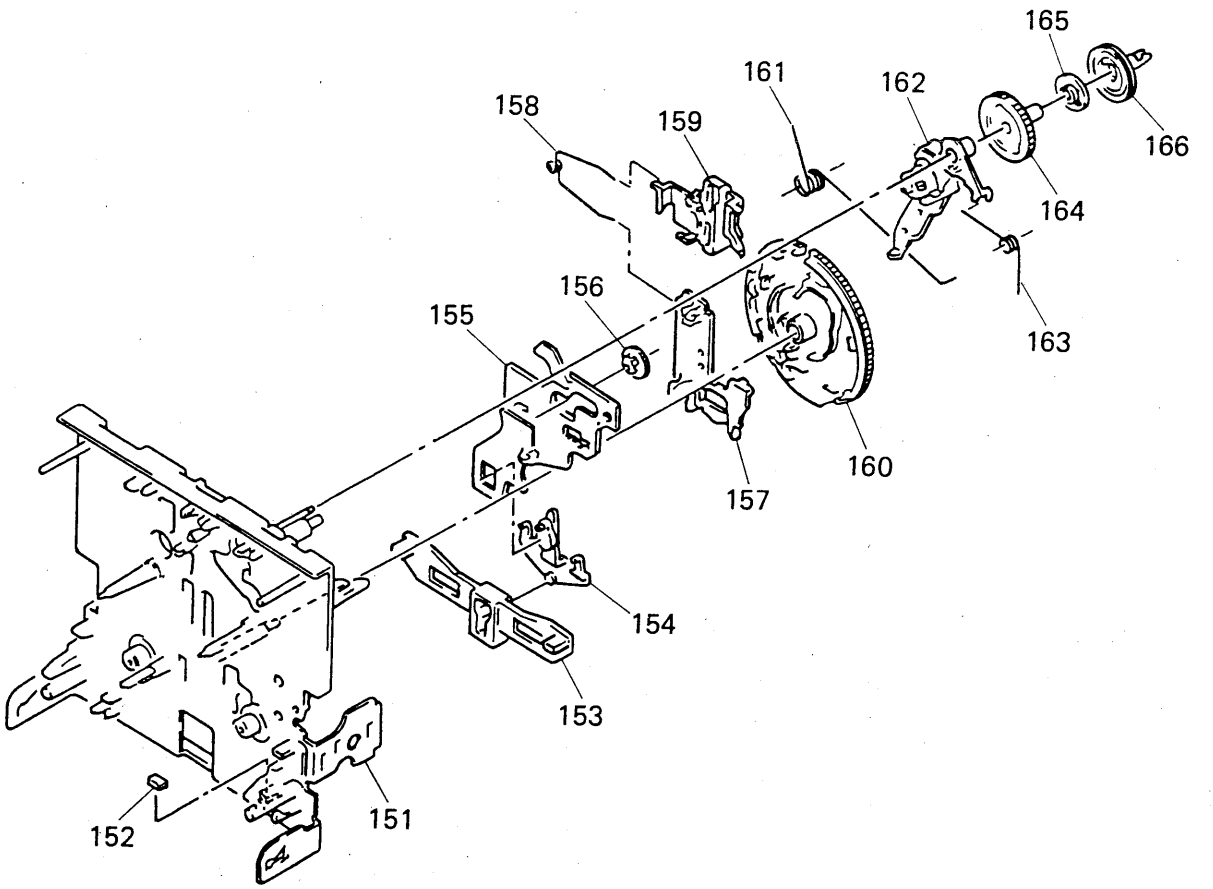
6-3. MECHANISM SECTION 1
(TCM-190RA12CL : DECK-A)
(TCM-190RB12C7 : DECK-B)



Ref.No.	Part No.	Description	Remark
101	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY	
102	3-356-713-01	WASHER	
103	3-359-455-01	SPRING, TORSION	
104	X-3359-404-1	TABLE (A) ASSY, REEL	
105	3-362-308-01	CAP (REEL)	
106	3-356-714-01	WASHER	
107	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY	
108	X-3362-078-1	TABLE ASSY, REEL	
109	3-359-424-01	GEAR (REV GEAR)	
110	3-359-430-01	SPRING(CASSETTE RETAINER),LEAF	
111	3-343-419-01	HOLDER (S SENSER A)	
* 112	1-634-841-14	SW-A BOARD(DECK-A)	
* 112	1-634-841-14	SW-A BOARD(DECK-A)	
113	3-359-466-01	BELT (FR), SQUARE	
114	X-3359-410-1	FLYWHEEL (REV) ASSY	

Ref.No.	Part No.	Description	Remark
115	3-359-417-01	BELT (FLAT), CAPSTAN	
116	X-3359-406-1	FLYWHEEL (FWD) ASSY	
117	3-575-321-00	RETAINER, THRUST, CAPSTAN	
* 118	3-359-436-01	BASE (THRUST RETAINER),FITTING	
119	3-359-414-01	SCREW (+PTPWH 2X23)	
* 120	A-2006-609-A	AUDIO BOARD, COMPLETE(DECK-A)	
* 120	A-2006-828-A	AUDIO BOARD, COMPLETE(DECK-B)	
121	1-638-983-11	MOTOR FLEXIBLE BOARD	
HP101	A-2003-837-F	DECK ASSY, HEAD(PLAYBACK)(DECK-A)	
HRPE101	A-2003-838-L	DECK ASSY, HEAD(RECOD/PLAYBACK)(DECK-B)	
IC81	8-749-924-10	IC NJL5165K-B	
M1	X-3365-377-1	MOTOR ASSY, CAPSTAN (DECK-A)	
M1	X-3365-377-1	MOTOR ASSY, CAPSTAN (DECK-B)	
M2	X-3363-501-1	MOTOR ASSY, REEL (DECK-A)	
M2	X-3363-501-1	MOTOR ASSY, REEL (DECK-B)	

6-4. MECHANISM SECTION 2
(TCM-190RA12CL : DECK-A)
(TCM-190RB12C7 : DECK-B)



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

SECTION 7
ELECTRICAL PARTS LIST

AUDIO (DECK-A) AUDIO (DECK-B)

NOTE :
- 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.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

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

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

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

Ref.No.	Part No.	Description			Remark
*	A-2006-609-A	AUDIO BOARD, COMPLETE(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
		< CONNECTOR >			
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD			
CNJ72	1-764-902-11	CONNECTOR, FFC/FPC 4P			
		< CONNECTOR >			
* CNP32	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P			
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
		< IC >			
IC31	8-759-106-02	IC uPC4570G2			
		< JUMPER RESISTOR >			
JW1	1-216-295-00	METAL CHIP	0	5%	1/10W
JW51	1-216-296-91	METAL GLAZE	0	5%	1/8W
JW52	1-216-296-91	METAL GLAZE	0	5%	1/8W
JW53	1-216-296-91	METAL GLAZE	0	5%	1/8W
JW54	1-216-296-91	METAL GLAZE	0	5%	1/8W

Ref.No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q71	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	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R74	1-216-089-91	METAL GLAZE	47K	5%	1/10W
		< VARIABLE RESISTOR >			
RV11	1-241-761-11	RES, ADJ, CARBON 1K (PB LEVEL L-CH)			
RV21	1-241-761-11	RES, ADJ, CARBON 1K (PB-LEVEL R-CH)			
RV71	1-241-630-11	RES, ADJ, CARBON 10K(TAPE SPEED NORMAL)			
RV72	1-241-630-11	RES, ADJ, CARBON 10K(TAPE SPEED HIGH)			
**********					
*	A-2006-828-A	AUDIO BOARD, COMPLETE(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

Ref. No.	Part No.	Description			Remark
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
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	1-107-584-91	CERAMIC	4PF	0.25PF	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	1-764-902-11	CONNECTOR, FFC/FPC 4P			
* CNP75	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P			
		< DIODE >			
D31	8-719-016-74	DIODE 1SS352			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC31	8-759-106-02	IC uPC4570G2			
IC81	8-759-106-56	IC uPC1297CA			
		< COIL >			
L81	1-410-780-11	INDUCTOR	27mH		
L91	1-410-780-11	INDUCTOR	27mH		
		< TRANSISTOR >			
Q51	8-729-808-01	TRANSISTOR	2SD1622-S		
Q52	8-729-808-01	TRANSISTOR	2SD1622-S		
Q53	8-729-808-01	TRANSISTOR	2SD1622-S		
Q71	8-729-216-22	TRANSISTOR	2SA1162-G		
		< 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
R33	1-216-065-00	METAL CHIP	4.7K	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
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	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R74	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R76	1-216-090-00	METAL CHIP	51K	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
R91	1-216-073-00	METAL CHIP	10K	5%	1/10W
R92	1-216-085-00	METAL CHIP	33K	5%	1/10W
R93	1-216-001-00	METAL CHIP	10	5%	1/10W
R94	1-216-101-00	METAL CHIP	150K	5%	1/10W
R95	1-216-075-00	METAL CHIP	12K	5%	1/10W

AUDIO (DECK-B) DOLBY (S)

Ref.No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV11	1-241-761-11	RES, ADJ, CARBON 1K (PB LEVEL L-CH)	
RV21	1-241-761-11	RES, ADJ, CARBON 1K (PB-LEVEL R-CH)	
RV71	1-241-630-11	RES, ADJ, CARBON 10K(TAPE SPEED NORMAL)	
RV72	1-241-630-11	RES, ADJ, CARBON 10K(TAPE SPEED HIGH)	
RV81	1-241-786-11	RES, ADJ, CARBON 22K(REC BIAS L-CH)	
RV91	1-241-786-11	RES, ADJ, CARBON 22K(REC BIAS R-CH)	
		< RELAY >	
RY31	1-515-803-11	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	
		< TEST PIN >	
* TP81	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P	
**********			
*	A-2007-173-A	DOLBY (S) BOARD, COMPLETE	
		**********	
		< CAPACITOR >	
C1	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C2	1-135-177-21	TANTALUM CHIP 1uF 20%	20V
C3	1-104-558-11	FILM CHIP 0.039uF 5%	16V
C4	1-163-007-11	CERAMIC CHIP 680PF 10%	50V
C5	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C6	1-164-717-11	CERAMIC CHIP 0.0082uF 5%	50V
C7	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C8	1-104-562-11	FILM CHIP 0.082uF 5%	16V
C9	1-104-553-11	FILM CHIP 0.015uF 5%	16V
C10	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C11	1-135-145-11	TANTALUM CHIP 0.47uF 10%	35V
C12	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C13	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C14	1-162-568-11	CERAMIC CHIP 0.33uF 10%	16V
C15	1-104-562-11	FILM CHIP 0.082uF 5%	16V
C16	1-135-145-11	TANTALUM CHIP 0.47uF 10%	35V
C17	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C18	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C19	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C20	1-104-553-11	FILM CHIP 0.015uF 5%	16V
C21	1-164-717-11	CERAMIC CHIP 0.0082uF 5%	50V
C22	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C23	1-164-161-11	CERAMIC CHIP 0.0022uF 10%	100V
C24	1-163-005-11	CERAMIC CHIP 470PF 10%	50V

Ref.No.	Part No.	Description	Remark
C25	1-163-012-00	CERAMIC CHIP 0.0018uF 10%	50V
C26	1-104-558-11	FILM CHIP 0.039uF 5%	16V
C27	1-163-012-00	CERAMIC CHIP 0.0018uF 10%	50V
C28	1-163-012-00	CERAMIC CHIP 0.0018uF 10%	50V
C29	1-104-563-11	FILM CHIP 0.1uF 5%	16V
C30	1-135-145-11	TANTALUM CHIP 0.47uF 10%	35V
C31	1-104-555-11	FILM CHIP 0.022uF 5%	16V
C32	1-104-563-11	FILM CHIP 0.1uF 5%	16V
C33	1-163-024-00	CERAMIC CHIP 0.018uF 10%	50V
C34	1-104-563-11	FILM CHIP 0.1uF 5%	16V
C35	1-163-012-00	CERAMIC CHIP 0.0018uF 10%	50V
C36	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C37	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C38	1-163-024-00	CERAMIC CHIP 0.018uF 10%	50V
C39	1-104-555-11	FILM CHIP 0.022uF 5%	16V
C40	1-104-563-11	FILM CHIP 0.1uF 5%	16V
		< CONNECTOR >	
CN1	1-695-092-11	SOCKET, CONNECTOR 7P	
		< IC >	
IC1	8-752-056-51	IC CXA1417Q	
		< RESISTOR >	
R1	1-208-353-41	METAL GLAZE 33 2%	1/10W
R2	1-216-675-11	METAL CHIP 10K 0.5%	1/10W
R3	1-216-681-11	METAL CHIP 18K 0.5%	1/10W
R4	1-208-556-41	METAL GLAZE 820K 2%	1/10W
R5	1-216-668-11	METAL CHIP 5.1K 0.5%	1/10W
R6	1-208-442-41	METAL GLAZE 1.6K 2%	1/10W
R7	1-216-657-11	METAL CHIP 1.8K 0.5%	1/10W
R8	1-216-667-11	METAL CHIP 4.7K 0.5%	1/10W
R9	1-208-446-41	METAL GLAZE 2.4K 2%	1/10W
R10	1-208-440-41	METAL GLAZE 1.3K 2%	1/10W
R11	1-208-353-41	METAL GLAZE 33 2%	1/10W
R12	1-208-357-41	METAL GLAZE 47 2%	1/10W
R13	1-216-653-11	METAL CHIP 1.2K 0.5%	1/10W
R14	1-216-667-11	METAL CHIP 4.7K 0.5%	1/10W
R15	1-208-446-41	METAL GLAZE 2.4K 2%	1/10W
R16	1-208-353-41	METAL GLAZE 33 2%	1/10W
R17	1-208-357-41	METAL GLAZE 47 2%	1/10W
R18	1-216-657-11	METAL CHIP 1.8K 0.5%	1/10W
R19	1-208-442-41	METAL GLAZE 1.6K 2%	1/10W
R20	1-216-668-11	METAL CHIP 5.1K 0.5%	1/10W
R21	1-208-556-41	METAL GLAZE 820K 2%	1/10W
R22	1-216-655-11	METAL CHIP 1.5K 0.5%	1/10W
R23	1-216-678-11	METAL CHIP 13K 0.5%	1/10W
R24	1-216-673-11	METAL CHIP 8.2K 0.5%	1/10W

Ref. No.	Part No.	Description			Remark
R25	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R26	1-216-676-11	METAL CHIP	11K	0.5%	1/10W
R27	1-216-668-11	METAL CHIP	5.1K	0.5%	1/10W
R28	1-216-695-11	METAL CHIP	68K	0.5%	1/10W
R29	1-216-668-11	METAL CHIP	5.1K	0.5%	1/10W
R30	1-208-446-41	METAL GLAZE	2.4K	2%	1/10W
R31	1-216-680-11	METAL CHIP	16K	0.5%	1/10W
R32	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R33	1-208-469-41	METAL GLAZE	20K	2%	1/10W
R34	1-216-684-11	METAL CHIP	24K	0.5%	1/10W
R35	1-208-521-41	METAL GLAZE	30K	2%	1/10W
R36	1-208-521-41	METAL GLAZE	30K	2%	1/10W
R37	1-216-676-11	METAL CHIP	11K	0.5%	1/10W
R38	1-208-523-41	METAL GLAZE	36K	2%	1/10W
R39	1-216-668-11	METAL CHIP	5.1K	0.5%	1/10W
R40	1-208-521-41	METAL GLAZE	30K	2%	1/10W
R41	1-216-680-11	METAL CHIP	16K	0.5%	1/10W
R42	1-216-673-11	METAL CHIP	8.2K	0.5%	1/10W
R43	1-216-676-11	METAL CHIP	11K	0.5%	1/10W
R44	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R45	1-216-689-11	METAL CHIP	39K	0.5%	1/10W

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* A-2007-172-A MAIN BOARD, COMPLETE (US, Canadian, AEP, German)
* A-2007-176-A MAIN BOARD, COMPLETE(UK, Australian)
* A-2007-177-A MAIN BOARD, COMPLETE(E)
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7-685-646-79 SCREW +BVTP 3X8 TYPE2 IT-3
7-682-547-09 SCREW +BVTT 3X6 (S)

< CAPACITOR >

C101	1-124-927-11	ELECT	4.7uF	20%	100V
C102	1-124-907-11	ELECT	10uF	20%	50V
C103	1-130-476-00	MYLAR	0.0027uF	5%	50V
C104	1-162-294-31	CERAMIC	0.001uF	10%	50V
C105	1-124-907-11	ELECT	10uF	20%	50V
C106	1-124-907-11	ELECT	10uF	20%	50V
C107	1-136-165-00	FILM	0.1uF	5%	50V
C108	1-136-163-00	FILM	0.068uF	5%	50V
C109	1-124-907-11	ELECT	10uF	20%	50V
C121	1-124-927-11	ELECT	4.7uF	20%	100V
C122	1-162-282-31	CERAMIC	100PF	10%	50V
C131	1-124-916-11	ELECT	22uF	20%	63V
C132	1-124-907-11	ELECT	10uF	20%	50V
C151	1-124-907-11	ELECT	10uF	20%	50V
C152	1-124-925-11	ELECT	2.2uF	20%	100V
C153	1-164-159-11	CERAMIC	0.1uF		50V
C154	1-124-902-00	ELECT	0.47uF	20%	50V
C155	1-124-927-11	ELECT	4.7uF	20%	100V
C156	1-124-927-11	ELECT	4.7uF	20%	100V
C157	1-124-925-11	ELECT	2.2uF	20%	100V
C158	1-124-443-00	ELECT	100uF	20%	10V
C161	1-124-927-11	ELECT	4.7uF	20%	100V
C201	1-124-927-11	ELECT	4.7uF	20%	100V
C202	1-124-907-11	ELECT	10uF	20%	50V
C203	1-130-476-00	MYLAR	0.0027uF	5%	50V
C204	1-162-294-31	CERAMIC	0.001uF	10%	50V
C205	1-124-907-11	ELECT	10uF	20%	50V
C206	1-124-907-11	ELECT	10uF	20%	50V
C207	1-136-165-00	FILM	0.1uF	5%	50V
C208	1-136-163-00	FILM	0.068uF	5%	50V
C209	1-124-907-11	ELECT	10uF	20%	50V
C221	1-124-927-11	ELECT	4.7uF	20%	100V
C222	1-162-282-31	CERAMIC	100PF	10%	50V
C231	1-124-916-11	ELECT	22uF	20%	63V
C232	1-124-907-11	ELECT	10uF	20%	50V
C251	1-124-907-11	ELECT	10uF	20%	50V
C252	1-124-925-11	ELECT	2.2uF	20%	100V
C253	1-164-159-11	CERAMIC	0.1uF		50V
C254	1-124-902-00	ELECT	0.47uF	20%	50V
C255	1-124-927-11	ELECT	4.7uF	20%	100V
C256	1-124-927-11	ELECT	4.7uF	20%	100V
C257	1-124-925-11	ELECT	2.2uF	20%	100V
C258	1-124-443-00	ELECT	100uF	20%	10V
C261	1-124-927-11	ELECT	4.7uF	20%	100V
C501	1-130-476-00	MYLAR	0.0027uF	5%	50V
C502	1-136-164-00	FILM	0.082uF	5%	50V
C503	1-136-161-00	FILM	0.047uF	5%	50V
C504	1-130-475-00	MYLAR	0.0022uF	5%	50V
C511	1-124-907-11	ELECT	10uF	20%	50V
C512	1-124-907-11	ELECT	10uF	20%	50V
C513	1-124-907-11	ELECT	10uF	20%	50V
C514	1-124-907-11	ELECT	10uF	20%	50V
C515	1-124-903-11	ELECT	1uF	20%	50V
C541	1-124-443-00	ELECT	100uF	20%	10V
C542	1-124-443-00	ELECT	100uF	20%	10V
C544	1-124-902-00	ELECT	0.47uF	20%	50V
C545	1-124-443-00	ELECT	100uF	20%	10V
C547	1-124-916-11	ELECT	22uF	20%	63V
C548	1-124-902-00	ELECT	0.47uF	20%	50V
C549	1-124-925-11	ELECT	2.2uF	20%	100V
C571	1-126-103-11	ELECT	470uF	20%	16V
C572	1-124-360-00	ELECT	1000uF	20%	16V
C573	1-124-360-00	ELECT	1000uF	20%	16V
C574	1-124-902-00	ELECT	0.47uF	20%	50V
C581	1-126-916-11	ELECT	1000uF	20%	6.3V

MAIN

Ref. No.	Part No.	Description		Remark
C601	1-164-159-11	CERAMIC 0.1uF		50V
C602	1-164-159-11	CERAMIC 0.1uF		50V
C603	1-162-288-31	CERAMIC 330PF	10%	50V
C604	1-162-288-31	CERAMIC 330PF	10%	50V
C701	1-124-898-11	ELECT 4700uF	20%	16V
C702	1-124-898-11	ELECT 4700uF	20%	16V
C703	1-124-903-11	ELECT 1uF	20%	50V
C704	1-124-122-11	ELECT 100uF	20%	50V
C705	1-124-927-11	ELECT 4.7uF	20%	100V
C706	1-124-762-00	ELECT 4700uF	20%	10V
C707	1-124-473-11	ELECT 1000uF	20%	10V
C708	1-124-927-11	ELECT 4.7uF	20%	100V
C709	1-124-927-11	ELECT 4.7uF	20%	100V
C710	1-124-472-11	ELECT 470uF	20%	10V
C711	1-124-910-11	ELECT 47uF	20%	50V
C801	1-124-443-00	ELECT 100uF	20%	10V
C802	1-164-159-11	CERAMIC 0.1uF		50V
C804	1-124-902-00	ELECT 0.47uF	20%	50V
C805	1-161-494-00	CERAMIC 0.022uF		25V
C806	1-161-494-00	CERAMIC 0.022uF		25V
C807	1-161-494-00	CERAMIC 0.022uF		25V
C808	1-161-494-00	CERAMIC 0.022uF		25V
C809	1-161-494-00	CERAMIC 0.022uF		25V
C810	1-164-159-11	CERAMIC 0.1uF		50V
C841	1-124-907-11	ELECT 10uF	20%	50V
C861	1-162-294-31	CERAMIC 0.001uF	10%	50V
C862	1-162-294-31	CERAMIC 0.001uF	10%	50V
		< CONNECTOR >		
CN131	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P		
CN231	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P		
* CN501	1-691-916-11	CONNECTOR, BOARD TO BOARD		
* CN503	1-691-916-11	CONNECTOR, BOARD TO BOARD		
* CN504	1-691-916-11	CONNECTOR, BOARD TO BOARD		
CN506	1-568-826-11	CONNECTOR, FFC/FPC 7P		
CN701	1-766-280-11	PIN, CONNECTOR (PC BOARD) 7P		
CN801	1-506-468-11	PIN, CONNECTOR 3P		
* CN802	1-568-954-11	PIN, CONNECTOR 5P		
* CN803	1-568-954-11	PIN, CONNECTOR 5P		
CN804	1-750-442-11	CONNECTOR, FFC/FPC 37P		
CN805	1-568-826-11	CONNECTOR, FFC/FPC 7P		
CN806	1-568-826-11	CONNECTOR, FFC/FPC 7P		
		< CONNECTOR >		
CNP701	1-766-280-11	PIN, CONNECTOR (PC BOARD) 7P (POWER TRANSFORMER BOARD)		
* CNP702	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P(POWER TRANSFORMER BOARD) (EXCEPT E MODEL)		

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D151	8-719-933-33	DIODE HZS6A1L	
D251	8-719-933-33	DIODE HZS6A1L	
D501	8-719-912-20	DIODE 1SS120	
D501	8-719-987-63	DIODE 1N4148M	
D502	8-719-987-63	DIODE 1N4148M	
D511	8-719-200-82	DIODE 11ES2	
D512	8-719-200-82	DIODE 11ES2	
D513	8-719-200-82	DIODE 11ES2	
D514	8-719-200-82	DIODE 11ES2	
D541	8-719-987-63	DIODE 1N4148M	
D571	8-719-987-63	DIODE 1N4148M	
D572	8-719-987-63	DIODE 1N4148M	
D701	8-719-200-77	DIODE 10E2N	
D702	8-719-200-77	DIODE 10E2N	
D703	8-719-200-77	DIODE 10E2N	
D704	8-719-200-77	DIODE 10E2N	
D705	8-719-987-63	DIODE 1N4148M	
D706	8-719-987-63	DIODE 1N4148M	
D707	8-719-200-77	DIODE 10E2N	
D708	8-719-987-63	DIODE 1N4148M	
D709	8-719-933-33	DIODE HZS6A1L	
D710	8-719-933-33	DIODE HZS6A1L	
D711	8-719-933-33	DIODE HZS6A1L	
D712	8-719-000-78	DIODE uZL-7L2	
D713	8-719-987-63	DIODE 1N4148M	
D714	8-719-987-63	DIODE 1N4148M	
D715	8-719-987-63	DIODE 1N4148M	
D716	8-719-000-78	DIODE uZL-7L2	
D801	8-719-987-63	DIODE 1N4148M	
D802	8-719-987-63	DIODE 1N4148M	
D803	8-719-987-63	DIODE 1N4148M	
D804	8-719-987-63	DIODE 1N4148M	
		< IC >	
IC501	8-759-145-58	IC uPC4558C	
IC502	8-759-634-50	IC M5218AL	
IC503	8-752-066-35	IC CXA1563S	
IC504	8-759-145-58	IC uPC4558C	
IC506	8-752-058-57	IC CXA1599Q	
IC507	8-759-634-50	IC M5218AL	
IC601	8-759-207-05	IC TA7272P	
IC701	8-759-145-58	IC uPC4558C	
IC801	8-752-853-36	IC CXP82220-016Q	
IC802	8-759-000-48	IC MC14052BCP	
IC803	8-759-165-82	IC PST600E-T	
IC806	8-759-000-48	IC MC14052BCP	
IC807	8-759-916-14	IC SN74HC04AN	

Ref. No.	Part No.	Description		Remark
		< JACK >		
J501	1-565-258-11	JACK, PIN 4P(LINE IN/OUT)		
		< COIL >		
* L601	1-420-872-00	COIL, AIR CORE		
* L602	1-420-872-00	COIL, AIR CORE		
		< FILTER >		
LPF101	1-231-388-00	FILTER, LOW PASS		
LPF201	1-231-388-00	FILTER, LOW PASS		
		< TRANSISTOR >		
Q101	8-729-900-74	TRANSISTOR	DTC143TS	
Q121	8-729-900-74	TRANSISTOR	DTC143TS	
Q161	8-729-922-37	TRANSISTOR	2SD2144S-UVW	
Q201	8-729-900-74	TRANSISTOR	DTC143TS	
Q221	8-729-900-74	TRANSISTOR	DTC143TS	
Q261	8-729-922-37	TRANSISTOR	2SD2144S-UVW	
Q501	8-729-620-05	TRANSISTOR	2SC2603-EF	
Q502	8-729-620-05	TRANSISTOR	2SC2603-EF	
Q511	8-729-900-65	TRANSISTOR	DTA144ES	
Q512	8-729-900-65	TRANSISTOR	DTA144ES	
Q513	8-729-900-65	TRANSISTOR	DTA144ES	
Q514	8-729-900-65	TRANSISTOR	DTA144ES	
Q515	8-729-900-65	TRANSISTOR	DTA144ES	
Q516	8-729-900-65	TRANSISTOR	DTA144ES	
Q541	8-729-620-05	TRANSISTOR	2SC2603-EF	
Q542	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q544	8-729-900-65	TRANSISTOR	DTA144ES	
Q545	8-729-900-89	TRANSISTOR	DTC144ES	
Q546	8-729-620-05	TRANSISTOR	2SC2603-EF	
Q581	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q601	8-729-801-93	TRANSISTOR	2SD1387	
Q602	8-729-801-93	TRANSISTOR	2SD1387	
Q603	8-729-900-80	TRANSISTOR	DTC114ES	
Q701	8-729-141-83	TRANSISTOR	2SB1094-LK	
Q702	8-729-209-15	TRANSISTOR	2SD2012	
Q703	8-729-209-15	TRANSISTOR	2SD2012	
Q704	8-729-620-05	TRANSISTOR	2SC2603-E3	
Q705	8-729-900-80	TRANSISTOR	DTC114ES	
Q706	8-729-900-80	TRANSISTOR	DTC114ES	
Q707	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q708	8-729-140-04	TRANSISTOR	2SB1116A-L	
Q801	8-729-900-80	TRANSISTOR	DTC114ES	
Q802	8-729-900-89	TRANSISTOR	DTC144ES	
Q841	8-729-900-61	TRANSISTOR	DTA114ES	
Q842	8-729-900-80	TRANSISTOR	DTC114ES	
Q843	8-729-119-76	TRANSISTOR	2SA1175-HFE	
		< RESISTOR >		
R101	1-249-437-11	CARBON	47K 5% 1/4W	
R102	1-249-429-11	CARBON	10K 5% 1/4W	
R103	1-249-433-11	CARBON	22K 5% 1/4W	
R104	1-249-423-11	CARBON	3.3K 5% 1/4W	
R105	1-249-441-11	CARBON	100K 5% 1/4W	
R106	1-249-428-11	CARBON	8.2K 5% 1/4W	
R107	1-249-432-11	CARBON	18K 5% 1/4W	
R108	1-249-421-11	CARBON	2.2K 5% 1/4W	
R111	1-249-431-11	CARBON	15K 5% 1/4W	
R112	1-249-429-11	CARBON	10K 5% 1/4W	
R121	1-249-437-11	CARBON	47K 5% 1/4W	
R122	1-247-846-11	CARBON	4.3K 5% 1/4W	
R123	1-249-435-11	CARBON	33K 5% 1/4W	
R124	1-249-425-11	CARBON	4.7K 5% 1/4W	
R125	1-249-429-11	CARBON	10K 5% 1/4W	
R151	1-247-807-31	CARBON	100 5% 1/4W	
R152	1-247-807-31	CARBON	100 5% 1/4W	
R153	1-249-439-11	CARBON	68K 5% 1/4W	
R154	1-249-421-11	CARBON	2.2K 5% 1/4W	
R156	1-249-409-11	CARBON	220 5% 1/4W	
R157	1-247-887-00	CARBON	220K 5% 1/4W	
R161	1-249-434-11	CARBON	27K 5% 1/4W	
R162	1-249-441-11	CARBON	100K 5% 1/4W	
R163	1-249-435-11	CARBON	33K 5% 1/4W	
R164	1-249-417-11	CARBON	1K 5% 1/4W	
R165	1-249-421-11	CARBON	2.2K 5% 1/4W	
R166	1-247-887-00	CARBON	220K 5% 1/4W	
R167	1-249-421-11	CARBON	2.2K 5% 1/4W	
R201	1-249-437-11	CARBON	47K 5% 1/4W	
R202	1-249-429-11	CARBON	10K 5% 1/4W	
R203	1-249-433-11	CARBON	22K 5% 1/4W	
R204	1-249-423-11	CARBON	3.3K 5% 1/4W	
R205	1-249-441-11	CARBON	100K 5% 1/4W	
R206	1-249-428-11	CARBON	8.2K 5% 1/4W	
R207	1-249-432-11	CARBON	18K 5% 1/4W	
R208	1-249-421-11	CARBON	2.2K 5% 1/4W	
R211	1-249-431-11	CARBON	15K 5% 1/4W	
R212	1-249-429-11	CARBON	10K 5% 1/4W	
R221	1-249-437-11	CARBON	47K 5% 1/4W	
R222	1-247-846-11	CARBON	4.3K 5% 1/4W	
R223	1-249-435-11	CARBON	33K 5% 1/4W	
R224	1-249-425-11	CARBON	4.7K 5% 1/4W	
R225	1-249-429-11	CARBON	10K 5% 1/4W	
R251	1-247-807-31	CARBON	100 5% 1/4W	
R252	1-247-807-31	CARBON	100 5% 1/4W	

MAIN

Ref. No.	Part No.	Description				Remark
R253	1-249-439-11	CARBON	68K	5%	1/4W	
R254	1-249-421-11	CARBON	2.2K	5%	1/4W	
R256	1-249-409-11	CARBON	220	5%	1/4W	
R257	1-247-887-00	CARBON	220K	5%	1/4W	
R261	1-249-434-11	CARBON	27K	5%	1/4W	
R262	1-249-441-11	CARBON	100K	5%	1/4W	
R263	1-249-435-11	CARBON	33K	5%	1/4W	
R264	1-249-417-11	CARBON	1K	5%	1/4W	
R265	1-249-421-11	CARBON	2.2K	5%	1/4W	
R266	1-247-887-00	CARBON	220K	5%	1/4W	
R267	1-249-421-11	CARBON	2.2K	5%	1/4W	
R501	1-249-433-11	CARBON	22K	5%	1/4W	
R502	1-249-426-11	CARBON	5.6K	5%	1/4W	
R503	1-249-436-11	CARBON	39K	5%	1/4W	
R504	1-249-441-11	CARBON	100K	5%	1/4W	
R505	1-249-441-11	CARBON	100K	5%	1/4W	
R506	1-247-846-11	CARBON	4.3K	5%	1/4W	
R507	1-249-425-11	CARBON	4.7K	5%	1/4W	
R508	1-249-425-11	CARBON	4.7K	5%	1/4W	
R511	1-215-452-00	METAL	20K	1%	1/6W	
R512	1-249-417-11	CARBON	1K	5%	1/4W	
R513	1-249-433-11	CARBON	22K	5%	1/4W	
R514	1-249-435-11	CARBON	33K	5%	1/4W	
R515	1-249-433-11	CARBON	22K	5%	1/4W	
R516	1-249-433-11	CARBON	22K	5%	1/4W	
R517	1-249-435-11	CARBON	33K	5%	1/4W	
R541	1-215-455-00	METAL	27K	1%	1/6W	
⚠R542	1-212-863-00	FUSIBLE	18	5%	1/4W	F
R543	1-249-432-11	CARBON	18K	5%	1/4W	
R544	1-249-430-11	CARBON	12K	5%	1/4W	
R545	1-249-417-11	CARBON	1K	5%	1/4W	
R546	1-249-425-11	CARBON	4.7K	5%	1/4W	
R547	1-249-413-11	CARBON	470	5%	1/4W	
R548	1-249-429-11	CARBON	10K	5%	1/4W	
R549	1-249-429-11	CARBON	10K	5%	1/4W	
R550	1-249-429-11	CARBON	10K	5%	1/4W	
R551	1-249-417-11	CARBON	1K	5%	1/4W	
R552	1-247-872-11	CARBON	51K	5%	1/4W	
R554	1-249-429-11	CARBON	10K	5%	1/4W	
R555	1-247-840-00	CARBON	2.4K	5%	1/4W	
R556	1-249-437-11	CARBON	47K	5%	1/4W	
R557	1-247-852-11	CARBON	7.5K	5%	1/4W	
R558	1-247-852-11	CARBON	7.5K	5%	1/4W	
R559	1-247-858-11	CARBON	13K	5%	1/4W	
R560	1-249-425-11	CARBON	4.7K	5%	1/4W	
R561	1-249-430-11	CARBON	12K	5%	1/4W	
R562	1-249-430-11	CARBON	12K	5%	1/4W	
R563	1-249-422-11	CARBON	2.7K	5%	1/4W	
R564	1-249-426-11	CARBON	5.6K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R581	1-249-437-11	CARBON	47K	5%	1/4W	
R582	1-249-429-11	CARBON	10K	5%	1/4W	
R583	1-249-437-11	CARBON	47K	5%	1/4W	
R584	1-249-413-11	CARBON	470	5%	1/4W	
R601	1-247-807-31	CARBON	100	5%	1/4W	
R602	1-247-807-31	CARBON	100	5%	1/4W	
R603	1-249-433-11	CARBON	22K	5%	1/4W	
R604	1-249-433-11	CARBON	22K	5%	1/4W	
R605	1-249-433-11	CARBON	22K	5%	1/4W	
R606	1-249-433-11	CARBON	22K	5%	1/4W	
R607	1-249-430-11	CARBON	12K	5%	1/4W	
R608	1-249-430-11	CARBON	12K	5%	1/4W	
R609	1-249-433-11	CARBON	22K	5%	1/4W	
R610	1-249-433-11	CARBON	22K	5%	1/4W	
R611	1-249-421-11	CARBON	2.2K	5%	1/4W	
R612	1-249-421-11	CARBON	2.2K	5%	1/4W	
R613	1-249-429-11	CARBON	10K	5%	1/4W	
R614	1-249-429-11	CARBON	10K	5%	1/4W	
R701	1-249-414-11	CARBON	560	5%	1/4W	
R702	1-249-429-11	CARBON	10K	5%	1/4W	
R703	1-249-422-11	CARBON	2.7K	5%	1/4W	
R704	1-249-425-11	CARBON	4.7K	5%	1/4W	
R705	1-249-427-11	CARBON	6.8K	5%	1/4W	
R706	1-249-419-11	CARBON	1.5K	5%	1/4W	
R707	1-249-429-11	CARBON	10K	5%	1/4W	
R708	1-249-419-11	CARBON	1.5K	5%	1/4W	
R709	1-249-425-11	CARBON	4.7K	5%	1/4W	
R710	1-249-417-11	CARBON	1K	5%	1/4W	
R711	1-249-427-11	CARBON	6.8K	5%	1/4W	
R712	1-249-427-11	CARBON	6.8K	5%	1/4W	
R713	1-249-417-11	CARBON	1K	5%	1/4W	
R714	1-249-429-11	CARBON	10K	5%	1/4W	
R715	1-249-422-11	CARBON	2.7K	5%	1/4W	
R716	1-249-433-11	CARBON	22K	5%	1/4W	
R717	1-249-429-11	CARBON	10K	5%	1/4W	
R718	1-249-436-11	CARBON	39K	5%	1/4W	
R719	1-249-430-11	CARBON	12K	5%	1/4W	
⚠R720	1-219-136-11	FUSIBLE	0.22	10%	1/4W	F
⚠R721	1-219-136-11	FUSIBLE	0.22	10%	1/4W	F
⚠R722	1-219-136-11	FUSIBLE	0.22	10%	1/4W	F
R801	1-249-441-11	CARBON	100K	5%	1/4W	
R802	1-249-417-11	CARBON	1K	5%	1/4W	
R803	1-249-435-11	CARBON	33K	5%	1/4W	
R804	1-247-807-31	CARBON	100	5%	1/4W	
R805	1-247-807-31	CARBON	100	5%	1/4W	
R806	1-247-807-31	CARBON	100	5%	1/4W	
R807	1-247-807-31	CARBON	100	5%	1/4W	
R808	1-249-429-11	CARBON	10K	5%	1/4W	
R809	1-249-429-11	CARBON	10K	5%	1/4W	

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Ref.No.	Part No.	Description				Remark
R810	1-247-807-31	CARBON	100	5%	1/4W	
R811	1-247-807-31	CARBON	100	5%	1/4W	
R812	1-247-807-31	CARBON	100	5%	1/4W	
R813	1-247-807-31	CARBON	100	5%	1/4W	
R814	1-249-429-11	CARBON	10K	5%	1/4W	
R815	1-249-429-11	CARBON	10K	5%	1/4W	
R816	1-249-429-11	CARBON	10K	5%	1/4W	
R817	1-247-807-31	CARBON	100	5%	1/4W	
R818	1-249-441-11	CARBON	100K	5%	1/4W	
R819	1-249-441-11	CARBON	100K	5%	1/4W	
R841	1-249-432-11	CARBON	18K	5%	1/4W	
R842	1-249-425-11	CARBON	4.7K	5%	1/4W	
R844	1-249-421-11	CARBON	2.2K	5%	1/4W	
R845	1-247-852-11	CARBON	7.5K	5%	1/4W	
R846	1-249-431-11	CARBON	15K	5%	1/4W	
R847	1-247-866-11	CARBON	30K	5%	1/4W	
R848	1-247-874-11	CARBON	62K	5%	1/4W	
R849	1-249-429-11	CARBON	10K	5%	1/4W	
R850	1-249-429-11	CARBON	10K	5%	1/4W	
R851	1-249-429-11	CARBON	10K	5%	1/4W	
R852	1-249-429-11	CARBON	10K	5%	1/4W	
R853	1-249-434-11	CARBON	27K	5%	1/4W	
R854	1-249-434-11	CARBON	27K	5%	1/4W	
R855	1-249-434-11	CARBON	27K	5%	1/4W	
R856	1-249-434-11	CARBON	27K	5%	1/4W	
R857	1-249-422-11	CARBON	2.7K	5%	1/4W	
R858	1-249-422-11	CARBON	2.7K	5%	1/4W	
R859	1-249-422-11	CARBON	2.7K	5%	1/4W	
R861	1-249-421-11	CARBON	2.2K	5%	1/4W	
R862	1-249-421-11	CARBON	2.2K	5%	1/4W	
R863	1-249-421-11	CARBON	2.2K	5%	1/4W	
R864	1-249-434-11	CARBON	27K	5%	1/4W	
R865	1-249-421-11	CARBON	2.2K	5%	1/4W	
R866	1-249-421-11	CARBON	2.2K	5%	1/4W	
R867	1-249-421-11	CARBON	2.2K	5%	1/4W	
R868	1-249-434-11	CARBON	27K	5%	1/4W	
R871	1-249-433-11	CARBON	22K	5%	1/4W	
R872	1-249-429-11	CARBON	10K	5%	1/4W	
R873	1-249-433-11	CARBON	22K	5%	1/4W	
R874	1-249-429-11	CARBON	10K	5%	1/4W	
R935	1-249-427-11	CARBON	6.8K	5%	1/4W	(SWITCH BOARD)
R936	1-249-431-11	CARBON	15K	5%	1/4W	(SWITCH BOARD)
R945	1-249-427-11	CARBON	6.8K	5%	1/4W	(SWITCH BOARD)
		< VARIABLE RESISTOR >				
RV102	1-241-765-11	RES, ADJ, CARBON 22K(REC LEVEL L)				
RV202	1-241-765-11	RES, ADJ, CARBON 22K(REC LEVEL R)				
		< SWITCH >				
S801	1-554-118-00	SWITCH, PUSH (1 KEY)(POWER ON/OFF)				(POWER SWITCH BOARD)
S935	1-570-837-11	SWITCH, SLIDE(DOLBY NR ON/OFF)				(SWITCH BOARD)
S936	1-570-855-11	SWITCH, SLIDE(DOLBY NR B/C)				(SWITCH BOARD)
S945	1-570-855-11	SWITCH, SLIDE(DIR MODE)(SWITCH BOARD)				
		< TEST PIN >				
* TP501	1-564-506-11	PLUG, CONNECTOR 3P(TEST)				
* TP801	1-564-505-11	PLUG, CONNECTOR 2P(TEST)				
		< CRYSTAL >				
X801	1-579-175-11	VIBRATOR, CERAMIC(10MHz)				
**********						
*	A-2007-175-A	PANEL BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C591	1-164-159-11	CERAMIC	0.1uF		50V	(HEADPHONE BOARD)
		< CONNECTOR >				
CNP507	1-568-850-11	CONNECTOR, FFC/FPC 7P				
CNP804	1-750-478-11	CONNECTOR, FFC/FPC 37P				
		< IC >				
IC901	8-741-100-48	IC SBX1610-59				
		< JACK >				
J801	1-507-796-71	JACK(PHONES)(HEADPHONE BOARD)				
		< RESISTOR >				
R911	1-249-418-11	CARBON	1.2K	5%	1/4W	
R912	1-249-420-11	CARBON	1.8K	5%	1/4W	
R913	1-249-422-11	CARBON	2.7K	5%	1/4W	
R914	1-249-424-11	CARBON	3.9K	5%	1/4W	
R915	1-249-427-11	CARBON	6.8K	5%	1/4W	
R916	1-249-431-11	CARBON	15K	5%	1/4W	
R921	1-249-418-11	CARBON	1.2K	5%	1/4W	
R922	1-249-420-11	CARBON	1.8K	5%	1/4W	
R923	1-249-422-11	CARBON	2.7K	5%	1/4W	
R924	1-249-424-11	CARBON	3.9K	5%	1/4W	
R925	1-249-427-11	CARBON	6.8K	5%	1/4W	

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PANEL SW-A (DECK-A) SW-A (DECK-B)

Ref. No.	Part No.	Description			Remark
R926	1-249-431-11	CARBON	15K	5%	1/4W
R931	1-249-418-11	CARBON	1.2K	5%	1/4W
R932	1-249-420-11	CARBON	1.8K	5%	1/4W
R933	1-249-422-11	CARBON	2.7K	5%	1/4W
R934	1-249-424-11	CARBON	3.9K	5%	1/4W
R941	1-249-418-11	CARBON	1.2K	5%	1/4W
R942	1-249-420-11	CARBON	1.8K	5%	1/4W
R943	1-249-422-11	CARBON	2.7K	5%	1/4W
R944	1-249-424-11	CARBON	3.9K	5%	1/4W
R951	1-249-418-11	CARBON	1.2K	5%	1/4W
R952	1-249-420-11	CARBON	1.8K	5%	1/4W
R953	1-249-422-11	CARBON	2.7K	5%	1/4W
		< VARIABLE RESISTOR >			
RV901	1-223-616-11	RES, VAR, CARBON 5K/5K(BALANCE)			
RV902	1-223-617-11	RES, VAR, CARBON 5K/5K(REC LEVEL)			
		< SWITCH >			
S911	1-554-303-21	SWITCH, TACTILE(■/CLEAR:DECK-A)			
S913	1-554-303-21	SWITCH, TACTILE(▷/FRONT:DECK-A)			
S914	1-554-303-21	SWITCH, TACTILE(◁/BACK :DECK-A)			
S916	1-554-303-21	SWITCH, TACTILE(◁◁(AMS):DECK-B)			
S917	1-554-303-21	SWITCH, TACTILE((AMS)(▷▷:DECK-B)			
S918	1-554-303-21	SWITCH, TACTILE(○/REC :DECK-B)			
S921	1-554-303-21	SWITCH, TACTILE(■:DECK-B)			
S922	1-554-303-21	SWITCH, TACTILE(❚❚/PAUSE:DECK-B)			
S923	1-554-303-21	SWITCH, TACTILE(▷:DECK-B)			
S924	1-554-303-21	SWITCH, TACTILE(◁:DECK-B)			
S925	1-554-303-21	SWITCH, TACTILE(●/REC MUTE:DECK-B)			
S926	1-554-303-21	SWITCH, TACTILE(◁◁(AMS):DECK-B)			
S927	1-554-303-21	SWITCH, TACTILE((AMS)▷▷:DECK-B)			
S931	1-554-303-21	SWITCH, TACTILE(COUNTER RESET:DECK-A)			
S932	1-554-303-21	SWITCH, TACTILE(COUNTER MEMORY:DECK-A)			
S933	1-554-303-21	SWITCH, TACTILE(RMS DISPLAY)			
S934	1-554-303-21	SWITCH, TACTILE(START(DECK❚❚)AUTO CAL)			
S941	1-554-303-21	SWITCH, TACTILE(START(DECK❚❚)NORMAL)			
S942	1-554-303-21	SWITCH, TACTILE(START(DECK❚❚)HIGH)			
S943	1-554-303-21	SWITCH, TACTILE(COUNTER RESET:DECK-B)			
S944	1-554-303-21	SWITCH, TACTILE(COUNTER MEMORY:DECK-B)			
S951	1-554-303-21	SWITCH, TACTILE(RMS RMS/START)			
S952	1-554-303-21	SWITCH, TACTILE(RMS SET)			
S954	1-554-303-21	SWITCH, TACTILE(RMS CHECK)			
		< INDICATOR TUBE >			
VFD901	1-517-263-11	INDICATOR TUBE, FLUORESCENT			

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Ref. No.	Part No.	Description			Remark
*	1-634-841-14	SW-A BOARD(DECK-A)			
		**********			
		< CONNECTOR >			
* CNP81	1-568-850-11	SOCKET, CONNECTOR 7P			
		< IC >			
IC81	8-749-924-10	IC NJL5165K-B			
		< RESISTOR >			
R84	1-249-417-11	CARBON	1K	5%	1/4W
R85	1-249-408-11	CARBON	180	5%	1/4W
		< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY)(STOP)			
S82	1-571-281-21	SWITCH, LEAF(CrO_2)			
S86	1-571-281-21	SWITCH, LEAF(HALF)			

****

Ref. No.	Part No.	Description			Remark
*	1-634-841-14	SW-A BOARD(DECK-B)			
		**********			
		< CONNECTOR >			
* CNP81	1-568-850-11	SOCKET, CONNECTOR 7P			
		< IC >			
IC81	8-749-924-10	IC NJL5165K-B			
		< RESISTOR >			
R81	1-249-414-11	CARBON	560	5%	1/4W
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
R85	1-249-408-11	CARBON	180	5%	1/4W
		< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY)(STOP)			
S82	1-571-281-21	SWITCH, LEAF(CrO_2)			
S83	1-571-281-21	SWITCH, LEAF(METAL)			
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)			

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
⚠5	1-551-188-XX	CORD, POWER(E)	
⚠5	1-558-945-21	CORD, POWER (POLAR. SPT-1) (US, Canadian)	
⚠5	1-575-651-21	CORD, POWER(AEP, German)	
⚠5	1-696-586-11	CORD, POWER(UK)	
⚠5	1-696-845-11	CORD, POWER(Australian)	
⚠6	1-569-007-11	ADAPTER, CONVERSION 2P(E)	
63	1-590-209-21	WIRE (FLAT TYPE) (7 CORE)	
67	1-765-406-11	WIRE (FLAT TYPE) (37 CORE)	
68	1-590-963-11	WIRE (FLAT TYPE) (7 CORE)	
70	1-690-420-11	WIRE, FLAT TYPE (7 CORE)	
HP101	A-2003-837-F	DECK ASSY, HEAD(PLAYBACK) (DECK-A)	
HRPE101	A-2003-838-L	DECK ASSY, HEAD(RECOD/PLAYBACK) (DECK-B)	
M1	X-3365-377-1	MOTOR ASSY, CAPSTAN (DECK-A)	
M1	X-3365-377-1	MOTOR ASSY, CAPSTAN (DECK-B)	
M2	X-3363-501-1	MOTOR ASSY, REEL (DECK-A)	
M2	X-3363-501-1	MOTOR ASSY, REEL (DECK-B)	
⚠T801	1-450-837-61	TRANSFORMER, POWER(US, Canadian)	
⚠T801	1-450-838-61	TRANSFORMER, POWER (AEP, UK, German, Australian)	
⚠T801	1-450-839-31	TRANSFORMER, POWER(E)	
⚠VS801	1-692-155-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-558-271-11	CORD, CONNECTION	
*	3-376-446-01	CUSHION	
*	3-388-322-41	INDIVIDUAL CARTON	
	3-755-288-11	MANUAL, INSTRUCTION (RM) (FRENCH) (Canadian)	
	3-758-386-11	MANUAL, INSTRUCTION(ENGLISH/FRENCH/ SPANISH/PORTUGUESE) (AEP, E)	
	3-758-386-21	MANUAL, INSTRUCTION(ENGLISH) (US, Canadian, UK, Australian)	
	3-758-386-31	MANUAL, INSTRUCTION(FRENCH) (Canadian)	
	3-758-386-41	MANUAL, INSTRUCTION (GERMAN/DUTCH/SWEDISH/ITALIAN) (AEP)	
	3-758-386-51	MANUAL, INSTRUCTION(GERMAN) (German)	
	2-181-754-01	COVER, BATTERY(Canadian)	
	2-181-754-21	COVER, BATTERY(Canadian)	
	1-465-738-11	REMOTE COMMANDER(RM-J902) (Canadian)	
**********			

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-682-548-09	SCREW +BVTT 3X8 (S)	
#2	7-682-547-09	SCREW +BVTT 3X6 (S)	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#4	7-621-849-00	SCREW (BV/RING)	
#5	7-621-773-95	SCREW +BVTT 2.6X6 (S)	
#6	7-685-134-19	SCREW (+ PTPWH) (2.6X8)	
#8	7-627-556-08	SCREW +P 2.6X2.8	
#9	7-621-775-00	SCREW +B 2.6X3	

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