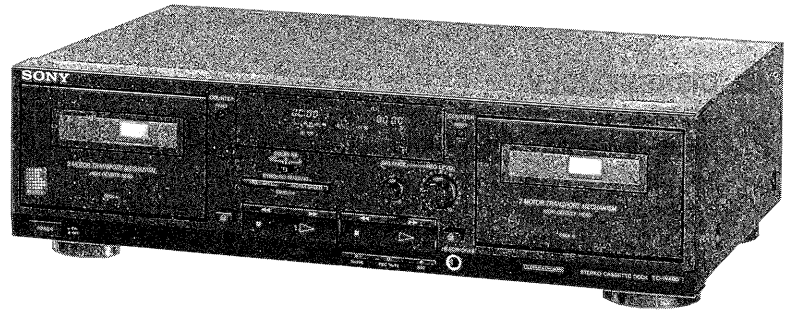
TC-W490

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model



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)

Cassette (Dolby NR OFF)	Type IV (Sony Metal-S)	Type II (Sony UX-S)	Type I (Sony HF-S)
	58 dB	57 dB	55 dB

Measured at peak level weighted without NR. The S/N is improved by about 15 dB at 500 Hz and by about 20 dB about 1 kHz with Dolby-C NR on, and by 5 dB at 1 kHz and by 10 dB about 5 kHz with Dolby-B NR on.

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 (Sony Metal-S)	30 - 18,000 Hz (±3 dB,IEC) 30 - 13,000 Hz [±3 dB (-4 dB) recording]
Type II cassette (Sony UX-S)	30 - 17,000 Hz (±3 dB,IEC)
Type I cassette (Sony HF-S)	30 - 15,000 Hz (±3 dB,IEC)

Wow and flutter — ± 0.14% W.Peak (IEC)
0.08% W.RMS (NAB)
± 0.19% W.Peak (DIN)

Inputs

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

Outputs

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

Model Name Using Similar Mechanism		TC-W320/W370
Tape Transport Machanism Type	DECK A	TCM-190VA12CS
	DECK B	TCM-190VB12CS

General

Power requirements — US, Canadian Model :
120V AC, 60 Hz
AEP Model :
220-230V AC, (or 240V AC adjustable by Sony personnel), 50/60 Hz
UK Model :
240V AC (or 220V AC adjustable by Sony personnel), 50/60 Hz
E Model :
120, 220 or 240V AC adjustable, 50/60 Hz

Power consumption — 23 W
Dimensions — Approx. 430 × 123 × 285 mm (w/h/d) (17 × 4⅞ × 11¼ inches) including projecting parts and controls
Weight — Approx. 4.5 kg (9 lbs 15 oz)

Supplied accessories

Audio connecting cords (2)

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

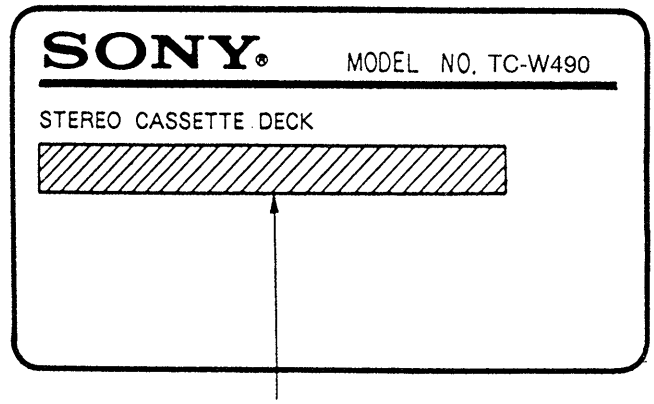
使用時は添付資料も参照のこと
Refer to the additional documents

STEREO CASSETTE DECK

SONY®

TABLE OF CONTENTS

MODEL IDENTIFICATION
(Specification Label)



US, Canadian model : AC120V 60Hz 23W
AEP, Germany model : AC220-230V ~ 50/60Hz
UK model : AC240V ~ 50/60Hz
E model : AC120, 220, 240V ~ 50/60Hz 23W

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)

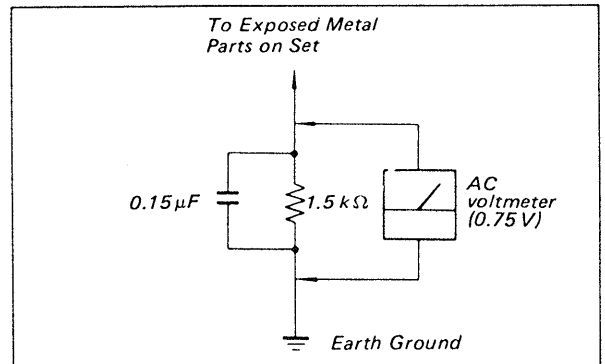


Fig. A. Using an AC voltmeter to check AC leakage.

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!

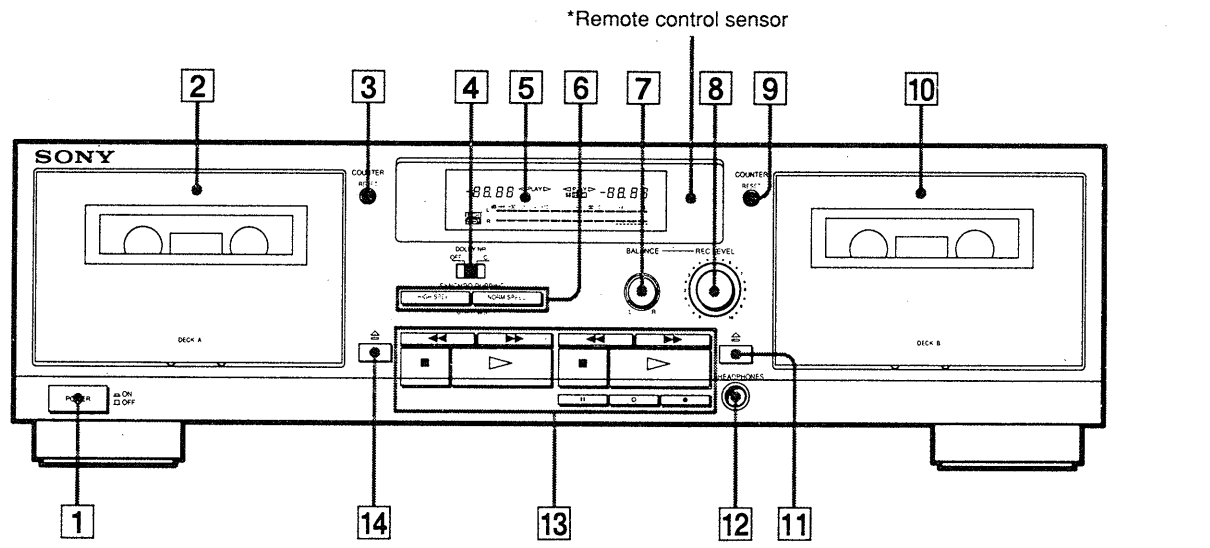
LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. IDENTIFYING THE PARTS

Front Panel



'ors

For details, refer to the page number indicated in parenthesis.

1 **POWER switch**
2 **Deck A**
3 **COUNTER RESET button (deck A)**
4 **DOLBY NR (Dolby noise reduction) switch**
5 **Display panel**
6 **SYNCHRO DUBBING buttons**
HIGH SPEED button
NORM (normal) SPEED button
7 **BALANCE control**
8 **REC (recording) LEVEL control**
9 **COUNTER RESET button (deck B)**
10 **Deck B**
11 **⏏ (eject) button (deck B)**
12 **HEADPHONES (headphones) jack (stereo phone jack)**
13 **Tape operation buttons**
◀◀ (leftward fast winding) button
▶▶ (rightward fast winding) button
■ (stop) button
▶ (forward play) button
II PAUSE button (deck B only)
O REC MUTE (record muting) button (deck B only)
● REC (recording) button (deck B only)
14 **⏏ (eject) button (deck A)**

***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.

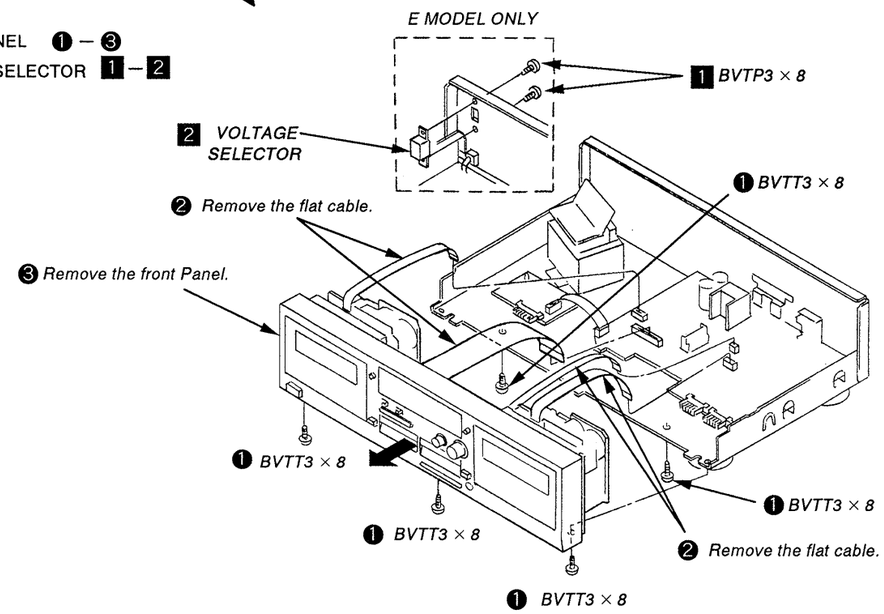
SECTION 2
DISASSEMBLY

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

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

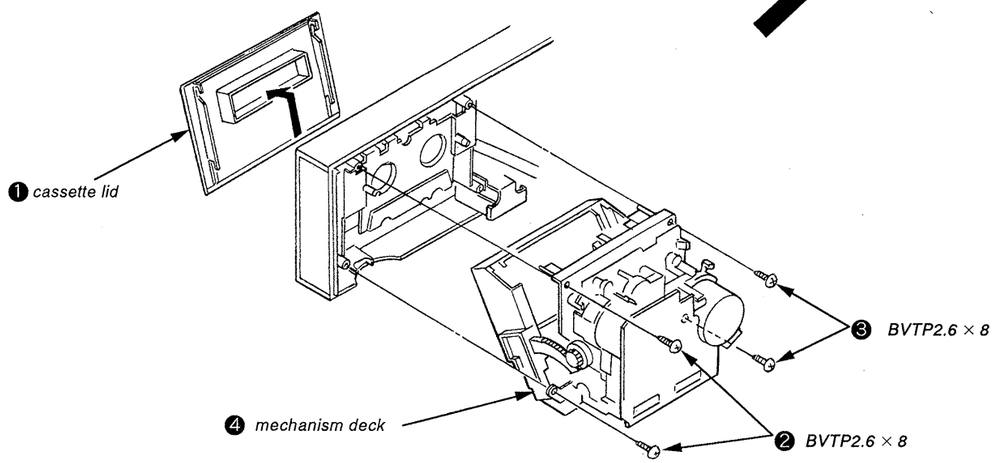
2-1. FRONT PANEL

FRONT PANEL ❶ – ❸
VOLTAGE SELECTOR 1 – 2



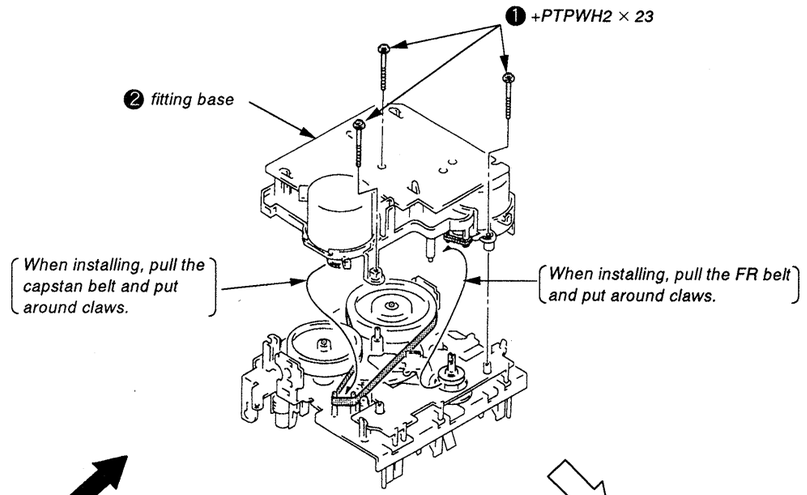
2-2 MECHANISM DECK

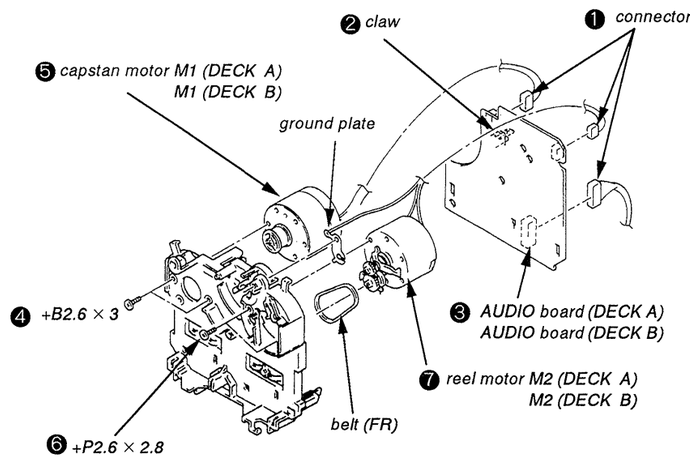
❶ Press the EJECT button.



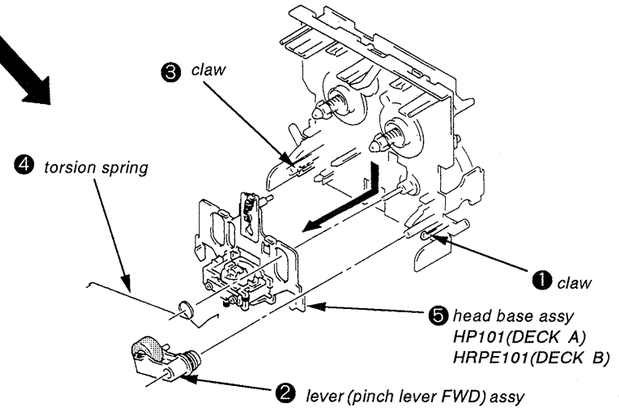
Remove the cassette holder

2-3. CAPSTAN MOTOR, REEL MOTOR





2-4. HEAD, PINCH ROLLER



SECTION 3
EXPLANATION OF IC TERMINALS

IC801 M50941-712P

Pin. No.	Terminal name	I/O	Terminal explanation
1	VREF		Standard voltage 5V
2	METER. L	I	Meter L-CH input
3	METER. R	I	Meter R-CH input
4	KEY. 1	I	Key input
5	KEY. 2	I	Key input
6	B. METAL	I	Metal tape detection at B-deck, "L" : Metal claw proof
7	B. LSW	I	Switch status (ON···Available, OFF···Not Available) / Input Voltage REC A / REC B / HALF / Input Voltage OFF / OFF / OFF / 5V ON / OFF / ON / 3.9V OFF / OFF / ON / 2.8V ON / ON / ON / 2V OFF / ON / ON / 1V
8	A. SHUT	I	S-side reel rotation detection at A-deck
9	B. SHUT	I	S-side reel rotation detection at B-deck
10	VER. SELECT	I	Reverse/1 way "L" : Reverse
11	MOT. H/L	O	Tape speed selector "L" Normal, "H" : High
12	A. RM +	O	Reel moter (+) output at A-deck, "H" : FF
13	A. RM −	O	Reel moter (−) output at A-deck, "H" : REW
14	B. RM +	O	Reel moter (+) output at B-deck, "H" : FF
15	B. RM −	O	Reel moter (−) output at B-deck, "H" : REW
16	RELAY	O	Recording/play selector at B-deck, "L" : Recording
17	BIAS	O	Bias ON/OFF at B-deck, "H" : ON
18	A/B	O	A-deck/B-deck play selector, at B-deck, "H" : A-deck
19	REC/PB	O	Recording/play selector for Dolby IC, "H" : play
20	EQ. H/L	O	NORMAL/HIGH selector for recording equalizer, "L" : NORMAL
21	REC. MUTE	O	Recording MUTE ON/OFF "L" : ON
22	L. MUTE	O	LINE MUTE ON/OFF "L" : ON
23	P. OUT	O	Power holding output "L" : Power on holding
24	P. IN	I	Power switch input "L" : OFF
25	SIRCS	I	SIRCS signal input
26	CN − VSS		GND
27	RESET	I	RESET signal input
28	X − IN	I	Oscillation terminal
29	X − OUT	O	Oscillation terminal (4MHz)
30	XC − IN		Not used
31	XC − OUT		Not used
32	VSS		GND
33			Not used
34	TEST	I	Test mode selector "L" : Test mode
35	B. STOPSW	I	Mechanism stop swich input for B-deck "H" : STOP

Pin. No.	Terminal name	I/O	Terminal explanation
36	A. STOPSW	I	Mechanism stop switch input for A-deck "H" : STOP
37	A. HALF	I	Half pawl input for A-deck "L" : Available
38	VP	I	Pull-down volatage input for fluorescent (FL) tube
39	B. CM	O	Capstan motor ON/OFF for B-deck, "H" : ON
40	A. CM	O	Capstan motor ON/OFF for A-deck, "H" : ON
41 – 62	7G-P15	O	Fluorescent (FL) tube output
63	AVCC		Analog power input
64	VCC		Power

IC51 CXA1579P

Pin. No.	Terminal name	I/O	Terminal explanation
1	SPEED	I	Tape speed selector terminal "H" : HIGH
2	METAL	I	Metal tape selector terminal "H" : METAL
3	TAPE EQ	I	Tape equalizer selector terminal "H" : CrO_2
4	REC IN1	I	Recording equalizer amp input terminal
5	GND		
6	BOOST1	I	External capacitor for low-pass boost connecting terminal
7	VEE		
8	REC OUT1	O	Recording equalizer amp output terminal
9	REC OUT2	O	Recording equalizer amp output terminal
10	VCC		
11	BOOST2		External capacitor for low-pass boost connecting terminal
12	IREF	O	Standard current setting terminal of monolithic filter
13	REC IN2	I	Recording equalizer amp input terminal
14	REC CAL	I	Recording calibration terminal "H" : Recording level gain down
15	REC MUTE	I	Recording Mute ON/OFF selector terminal "H" : Mute OFF "L" : Mute ON
16	GP CAL	I	High-pass calibration terminal "H" : High-pass level gain down "L" : High-pass level gain up

SECTION 4
ADJUSTMENTS

4-1. 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

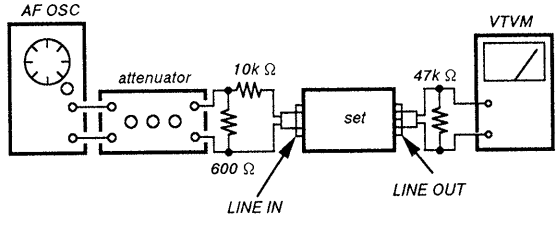
Torque	Torque	Meter reading
Forward	CQ-102C	30 to 65g•cm (0.42 to 0.9 oz•inch)
Forward back tension	CQ-102C	DECK A : 1 to 6g•cm (0.014 to 0.08 oz•inch) DECK B : 2 to 9g•cm (0.03 to 0.12 oz•inch)
Reverse	CQ-102RC	30 to 65g•cm (0.42 to 0.9 oz•inch)
Reverse back	CQ-102RC	1 to 6g•cm (0.014 to 0.08 oz•inch)
Forward, Reverse	CQ-201B	70 to 120g•cm (0.98 to 1.67 oz•inch)

4-2. 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

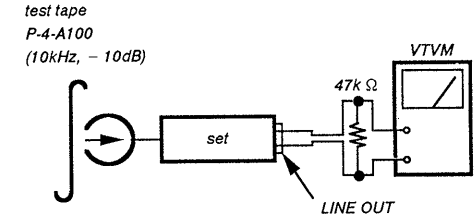
Test Mode

1. Turn ON the power switch to set to test mode while connecting pin ㉞ of IC801 to ground.
2. Turn OFF the power switch to release the test mode.
3. Executes high speed dubbing when the HIGH SPEED (DUBBING) button is pressed during dubbing.
   When pressing this button again, the normal speed dubbing is restored.
4. The DECK A and B can be adjusted in the same manner.

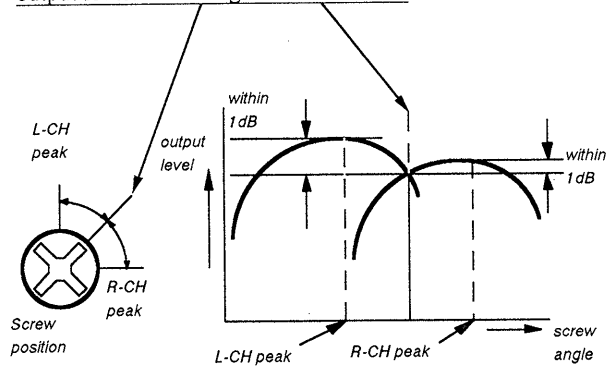
Record/Playback Head Azimuth Adjustment

Procedure :

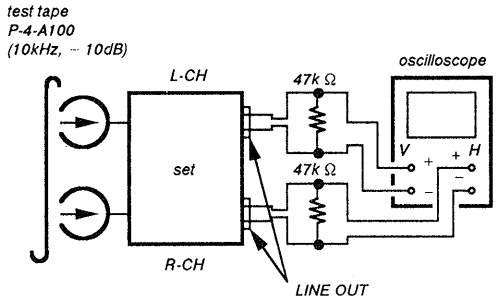
1. Forward playback Mode

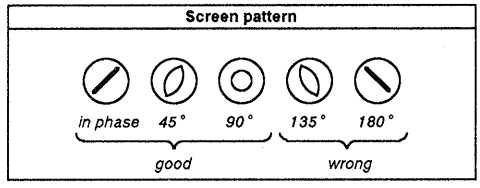


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



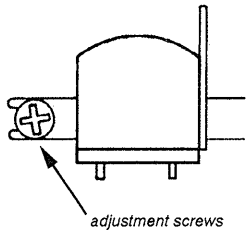
3. Playback Mode





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.

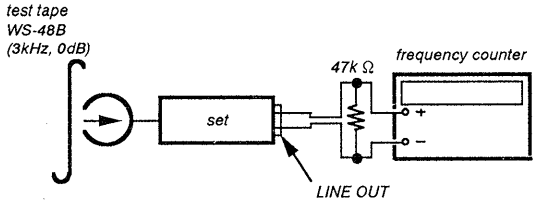
Adjustment Location : − record/playback head −



Tape Speed Adjustment

Procedure :

− Forward Playback Mode −



Perform high speed adjustment before normal speed adjustment.

(high speed adjustment)
1. Set to FWD playback mode.
2. Keep on pressing the HIGH SPEED DUBBING switch.
3. 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 reading becomes 3,000 ± 10Hz.

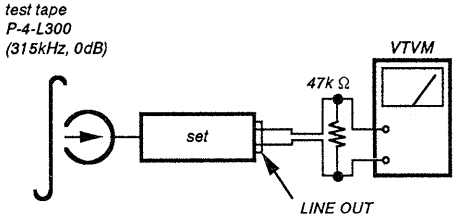
Frequency difference between the beginning and the end of the tape should be within 3%.
Frequency difference between deck A and deck B the beginning of the tape should be within 1.5%.

Adjustment Location : AUDIO board

Playback Level Adjustment

Procedure :

− Forward Playback Mode −



Adjust deck A, B : 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

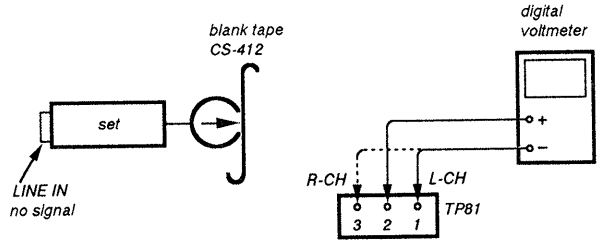
Adjustment Location : AUDIO board

Bias Consumption Current Adjustment

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 Location : AUDIO board

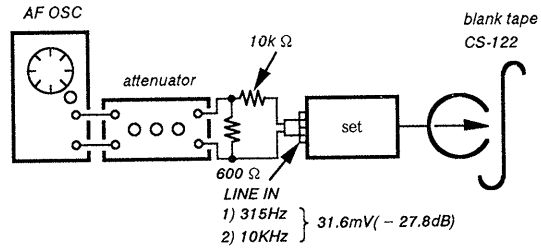
Record Level Adjustment

Setting :

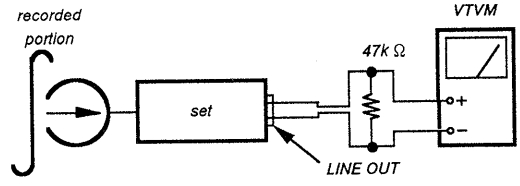
REC LEVEL control : standard record position (Refer to page 9.)

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

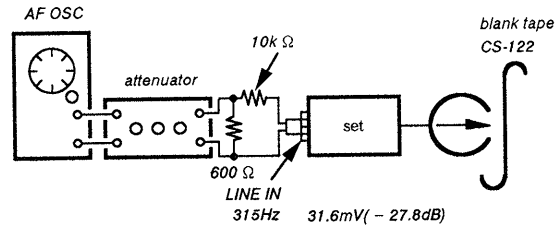
Record Level Adjustment

Setting :

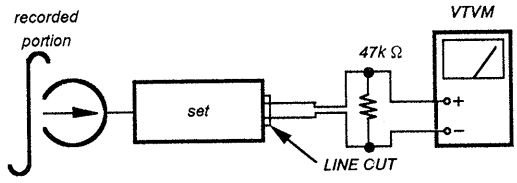
REC LEVEL control : standard record position (Refer to page 9.)

Procedure :

1. Record Mode



2. Playback Mode



Confirm playback the tape recorded become adjustment level as follows.

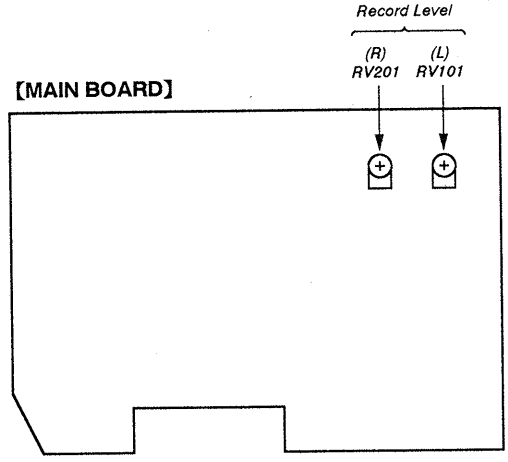
If necessary, adjust RV101(L-CH), RV201(R-CH) and repeat the steps 1 and 2.

Adjustment Value :

LINE OUT level : – 27.7 ± 0.5dB (30.2 to 33.8mV)

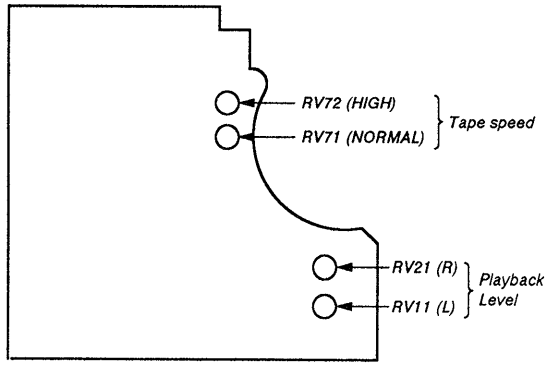
Adjustment Location : MAIN board

– Adjustment Parts Location Diagrams –

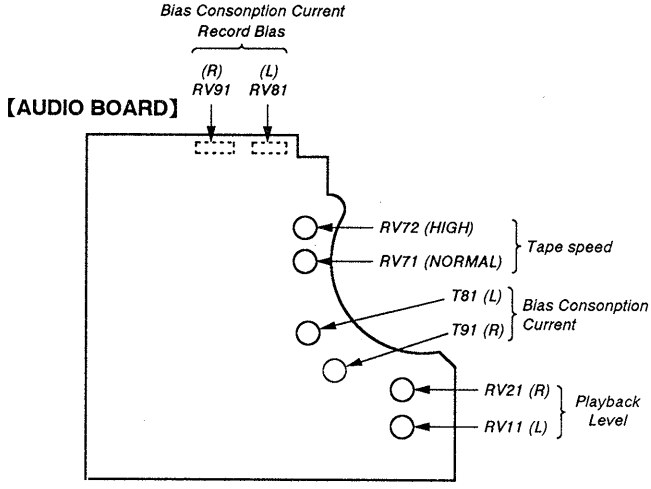


DECK A

【AUDIO BOARD】

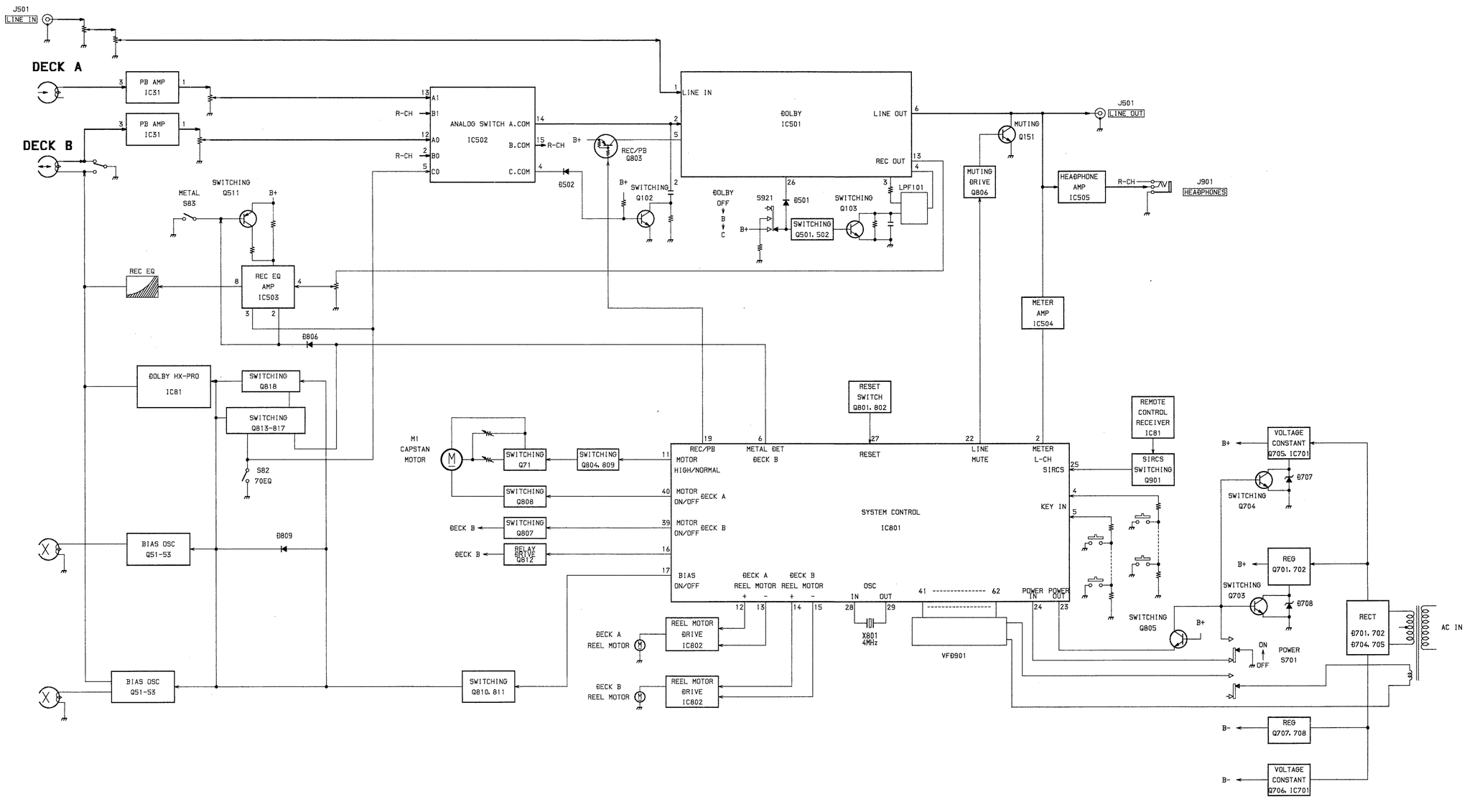


DECK B



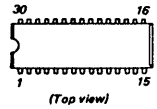
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM

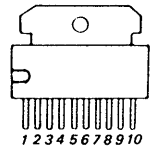


• SEMICONDUCTOR LEAD LAYOUTS.

CXA1331S

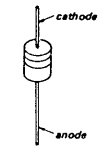


TA7272P

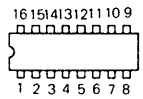


DTA114ES
DTC114ES
2SC2603-EF

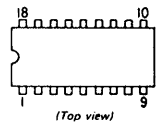
HZS6A1L



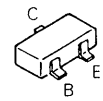
CXA1579P
MC14053



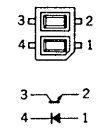
μ PC1297CA



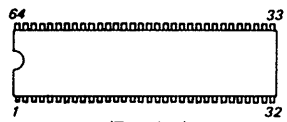
2SA1162



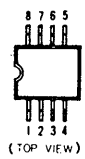
NJL5165K-B



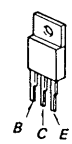
N50941-712SP



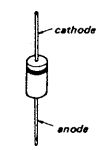
μ PC4570G2



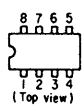
2SB1094-LK
2SD2012



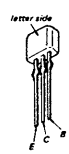
1N4148M
10E2N



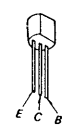
RC4558P



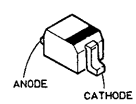
BN1L3Z-K
DTC114ES
DTC143TD
2SA1175-HFE



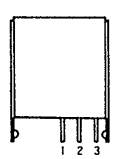
2SB1116A-L
2SD1387



1SS355

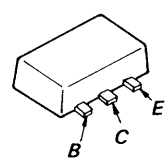


SBX1610-59



1 Vcc
2 Vout
3 GND

2SD1622-S



5-2. PRINTED WIRING BOARDS

* See page 16 for Semiconductor Lead Layouts.

● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D151	F - 21	Q102	G - 23
D251	F - 21	Q103	G - 24
D501	G - 21	Q151	D - 21
D502	G - 21	Q202	G - 22
D701	D - 16	Q203	G - 22
D702	D - 16	Q251	D - 20
D703	D - 15	Q501	G - 22
D704	D - 15	Q502	G - 21
D705	D - 16	Q701	D - 18
D706	D - 16	Q702	C - 18
D707	D - 15	Q703	D - 17
D708	D - 17	Q704	D - 20
D709	D - 20	Q705	C - 19
D710	E - 18	Q706	E - 18
D711	E - 16	Q707	E - 16
D712	E - 16	Q708	E - 16
D713	E - 17	Q801	E - 17
D714	E - 16	Q802	E - 18
D802	H - 15	Q803	F - 18
D803	H - 15	Q804	H - 18
D804	G - 20	Q805	F - 18
D805	G - 20	Q806	F - 18
D806	H - 20	Q807	H - 18
D807	I - 22	Q808	H - 15
D808	H - 18	Q809	H - 18
D809	J - 21	Q810	J - 20
D810	E - 18	Q811	J - 20
		Q812	I - 22
		Q813	I - 21
IC501	F - 23		
IC502	G - 21	Q814	I - 21
IC503	D - 23	Q815	I - 21
IC504	F - 21	Q816	I - 21
IC505	E - 21	Q817	I - 20
		Q818	J - 21
IC701	D - 19		
IC801	F - 17	Q901	G - 8
IC802	G - 18		
IC901	G - 8		

SW-A BOARD (DECK A)

Ref. No.	Location
IC81	C - 5

SW-B BOARD (DECK B)

Ref. No.	Location
IC81	H - 32

AUDIO BOARD (DECK A)

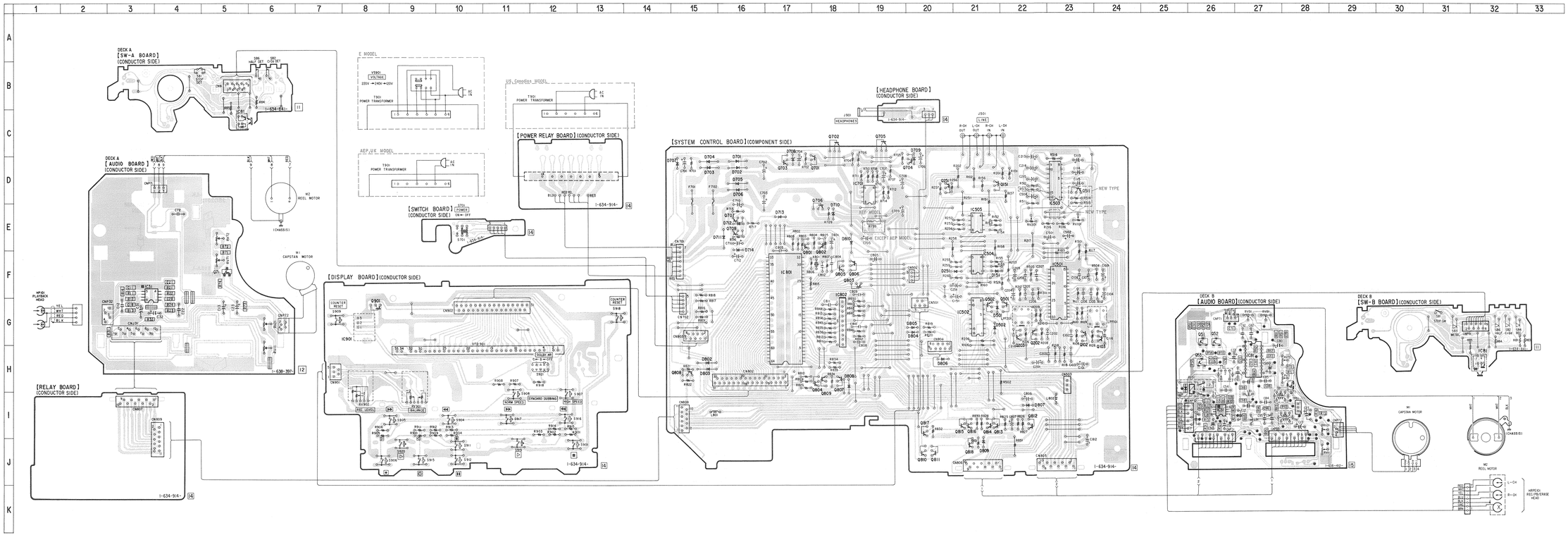
Ref. No.	Location
IC31	F - 3
Q71	F - 5

AUDIO BOARD (DECK B)

Ref. No.	Location
D31	H - 25
IC31	I - 26
IC81	H - 27
Q51	G - 26
Q52	G - 26
Q53	H - 26
Q71	H - 28

Note :

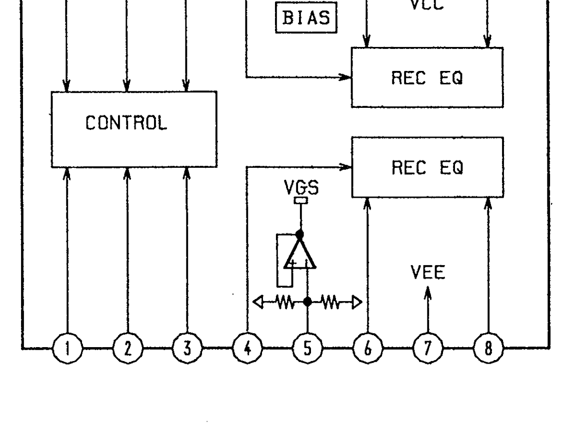
- ○—○ : parts extracted from the component side.
- ●—● : parts extracted from the conductor side.
- ⬚ : indicates side identified with part number.
- ▒▒▒ : Pattern on the side which is seen.
- ▒▒▒ : Pattern of the rear side.



5-3. SCHEMATIC DIAGRAM (SYSTEM CONTROL SECTION)

- IC BLOCK DIAGRAM

CXA1398P
CXA1579P



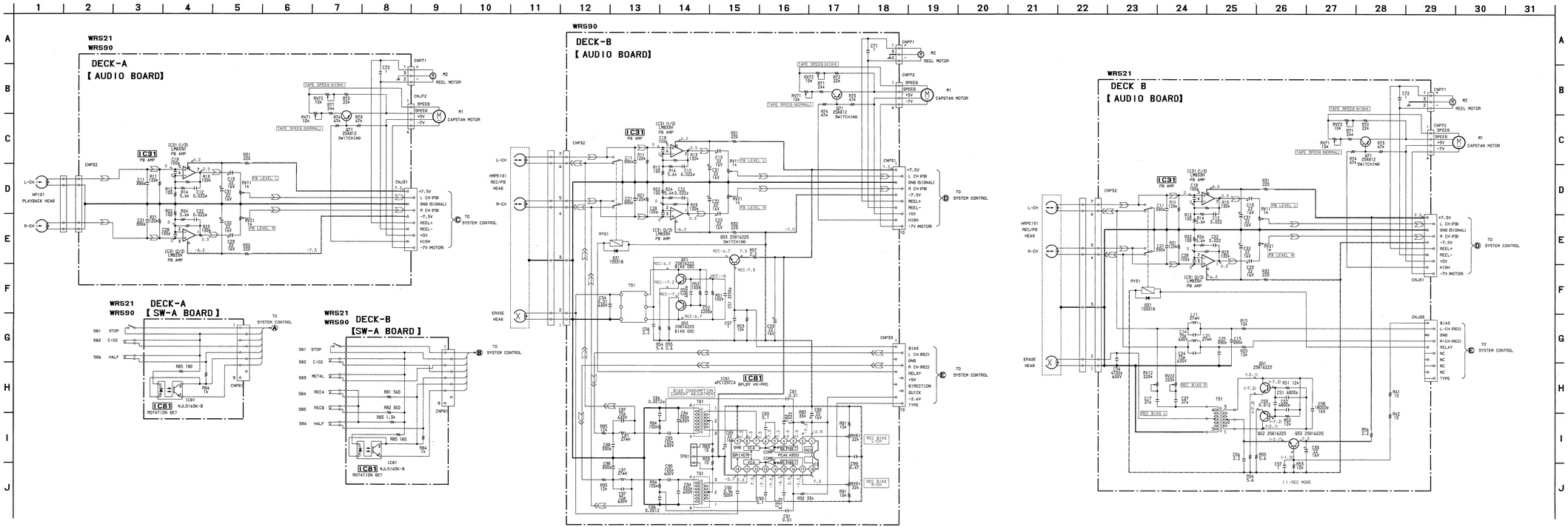
Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.

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.
- no mark : STOP
  ◎ : REC
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : PB (DECK B)
  : PB (DECK A)
  : REC (DECK B)

5-4. 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 tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- ▪▪▪▪▪▪ : B + Line
- ▪ ▪▪ ▪ ▪ : B− Line
- ▪ ▭ ▪ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal.
- no mark : STOP
  ▶ : FWD
  ◀ : REV
  ● : REC
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB (DECK A)
  ▭▷ : REC (DECK B)

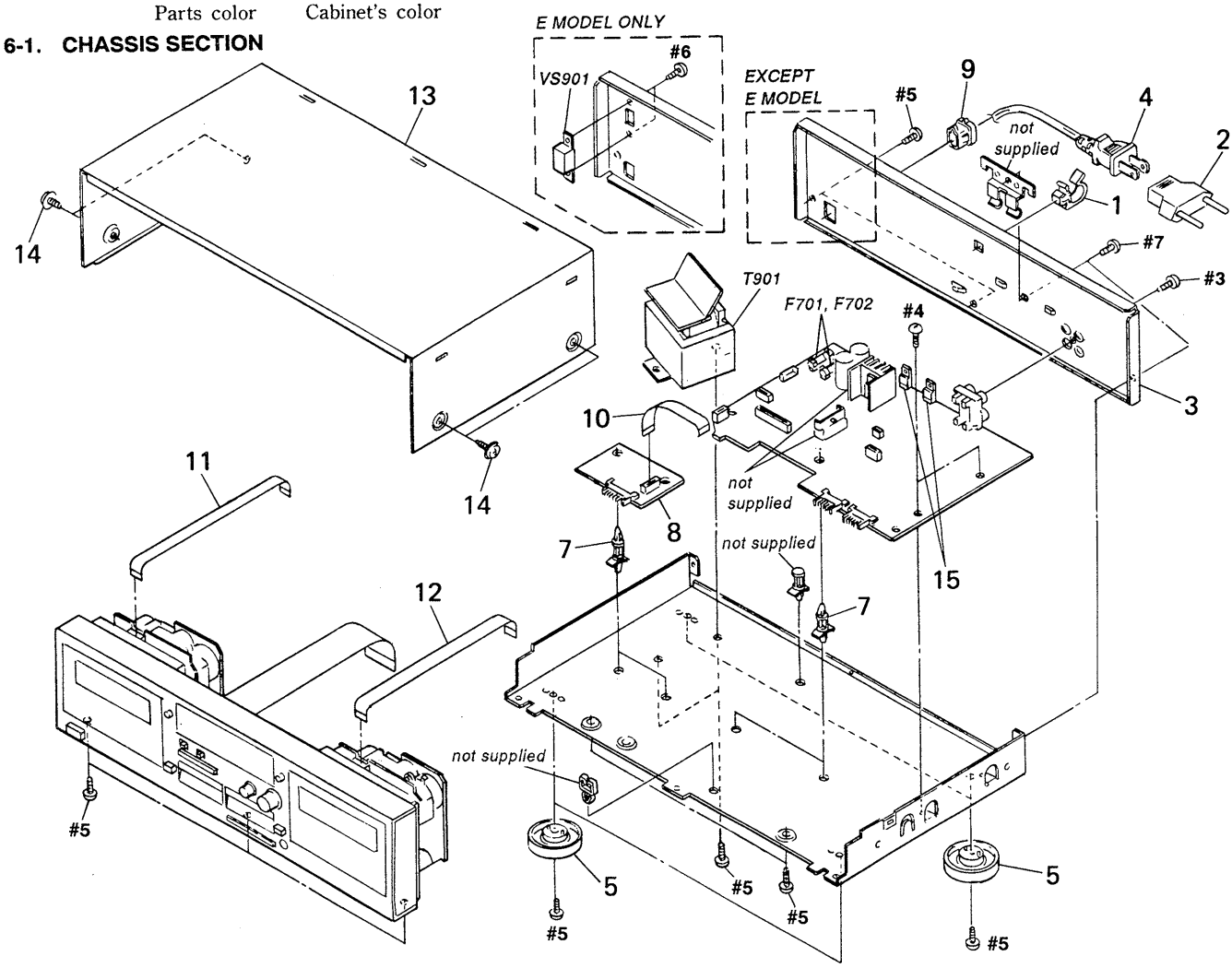
SECTION 6
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some differences 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 is 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.

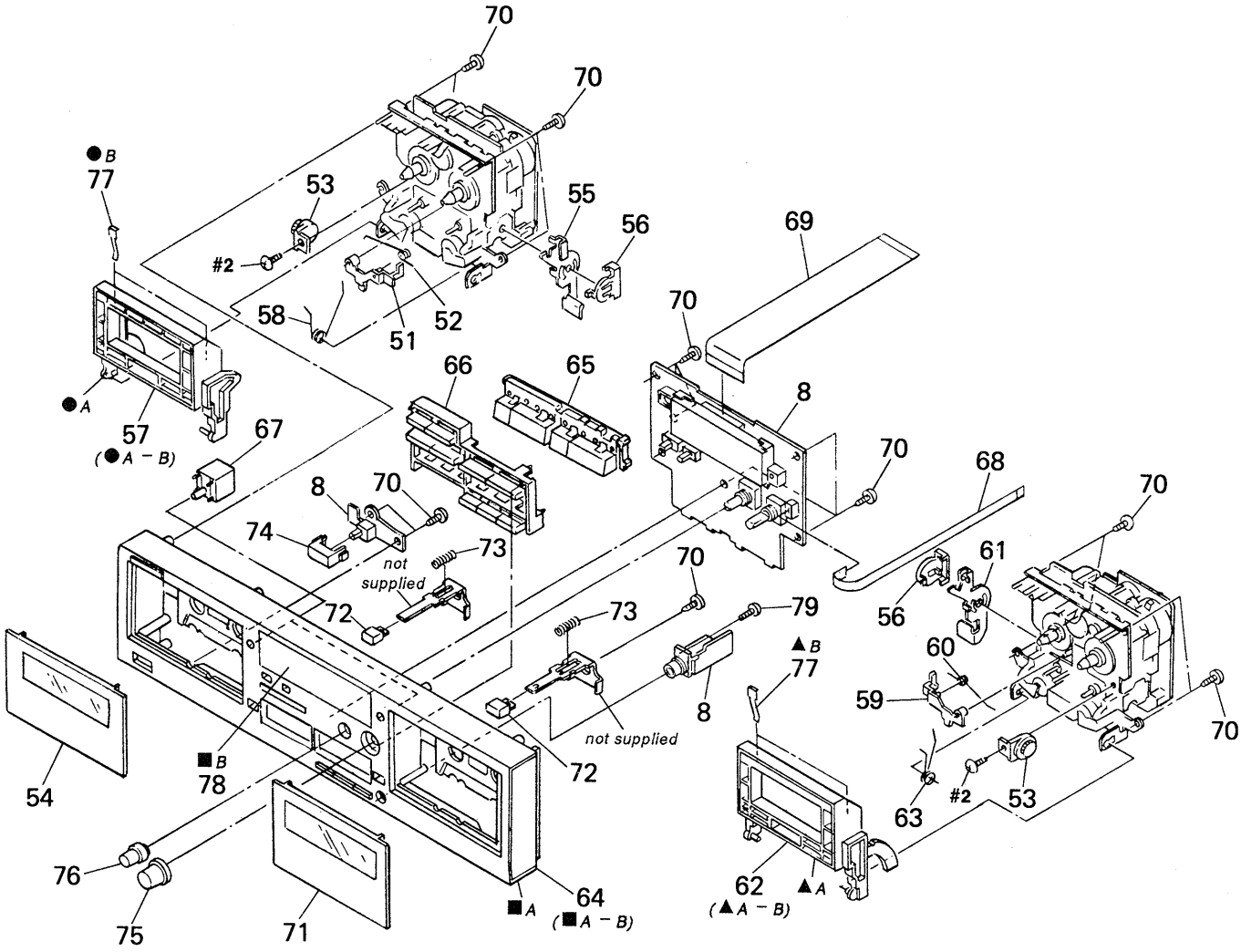
6-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
* 1	4-949-235-01	HOOK	
⚠2	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
* 3	3-377-350-01	PANEL, BACK (US, Canadian)	
* 3	3-377-350-21	PANEL, BACK (AEP)	
* 3	3-377-350-31	PANEL, BACK (UK)	
* 3	3-377-350-41	PANEL, BACK (E)	
⚠4	1-551-188-XX	CORD, POWER (E)	
⚠4	1-555-795-00	CORD, POWER, EULO PLUG (AEP)	
⚠4	1-556-035-00	CORD, POWER (UK)	
⚠4	1-558-945-11	CORD, POWER (POLAR. SPT-1) (US, Canadian)	
5	4-943-148-32	FOOT (F58175SW) (US, Canadian)	
* 7	3-346-265-11	HOLDER, PC BOARD	
* 8	A-2006-737-A	SYSTEM CONTROL BOARD, COMPLETE (US, Canadian, UK, E)	
* 8	A-2006-839-A	SYSTEM CONTROL BOARD, COMPLETE (AEP)	
* 9	3-703-244-00	BUSHING, CORD (AEP, UK)	
* 9	3-703-571-11	BUSHING (S), CORD (US, Canadian, E)	

Ref. No.	Part No.	Description	Remark
10	1-690-891-11	WIRE, FLAT TYPE (11 CORE)	
11	1-690-889-11	WIRE, FLAT TYPE (9 CORE)	
12	1-690-890-11	WIRE, FLAT TYPE (9 CORE)	
13	3-332-578-61	CASE	
14	3-704-366-01	SCREW (CASE) (M3X8)	
15	1-562-327-00	SOCKET, CONNECTOR 3P	
⚠F701	1-532-285-00	FUSE (AEP, UK, E)	
⚠F701	1-576-103-11	FUSE (US, Canadian)	
⚠F702	1-532-285-00	FUSE (AEP, UK, E)	
⚠F702	1-576-103-11	FUSE (US, Canadian)	
⚠T901	1-450-837-11	TRANSFORMER, POWER (US, Canadian)	
⚠T901	1-450-838-11	TRANSFORMER, POWER (AEP, UK)	
⚠T901	1-450-839-11	TRANSFORMER, POWER (E)	
⚠VS901	1-691-155-11	VOLTAGE SELECTOR (E)	

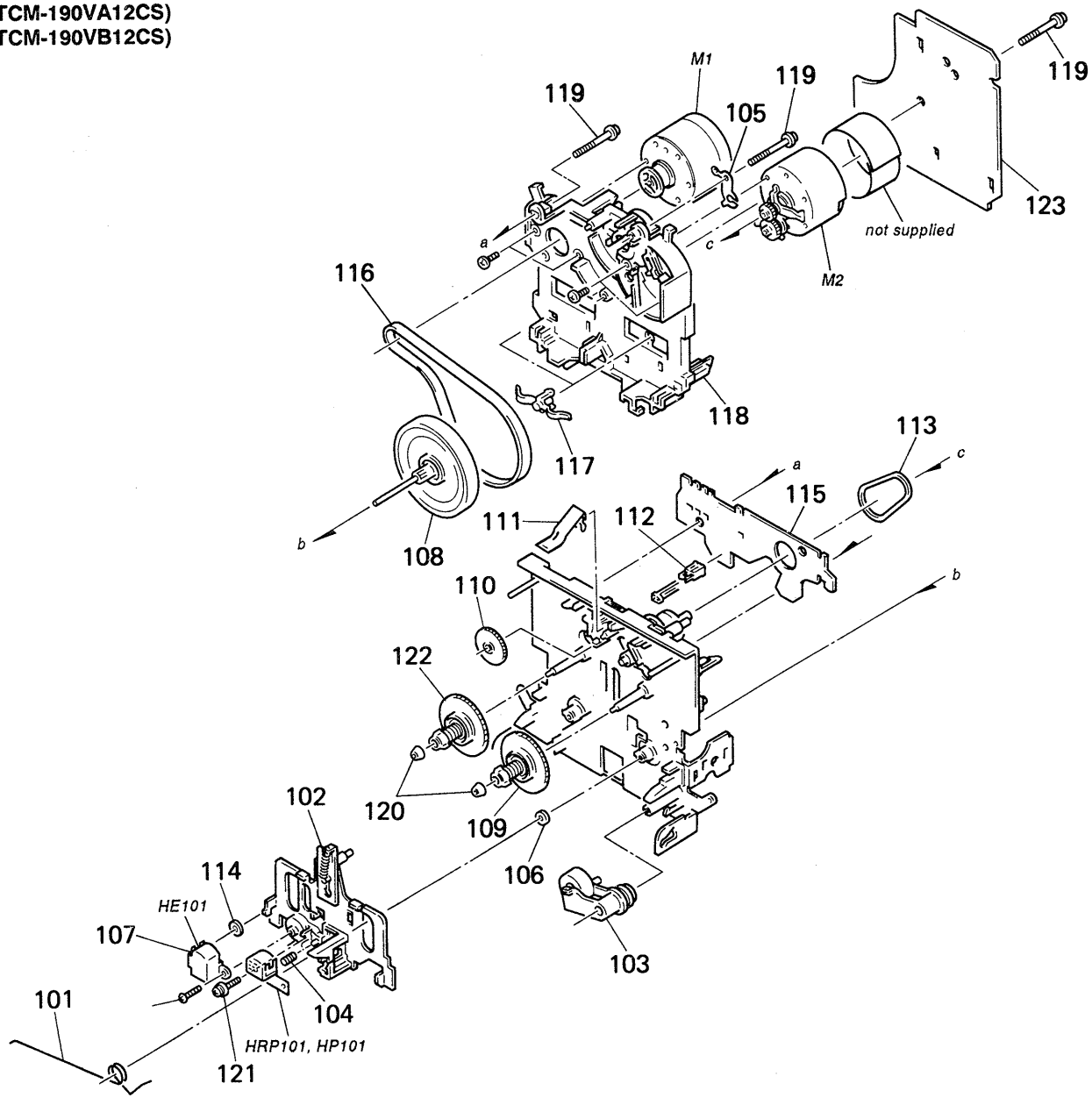
6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
52	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
53	3-354-963-01	DAMPER	
54	X-3364-742-1	LID (A) ASSY, CASSETTE	
* 55	3-354-954-01	LEVER (LOCK LEVER R)	
56	3-354-957-01	JOINT (LOCK LEVER)	
57	X-3340-195-1	HOLDER (R) ASSY, CASSETTE	
58	3-354-960-01	SPRING (LOADING R), TORSION	
59	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
60	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
* 61	3-354-953-01	LEVER (LOCK LEVER L)	
62	X-3340-194-1	HOLDER (L) ASSY, CASSETTE	
63	3-354-959-01	SPRING (LOADING L), TORSION	
64	X-3364-748-1	PANEL ASSY, FRONT (US, Canadian)	
64	X-3364-749-1	PANEL ASSY, FRONT (AEP, UK, E)	

Ref. No.	Part No.	Description	Remark
65	3-377-340-01	BUTTON (FW)	
66	3-377-341-01	BUTTON (SR)	
67	3-377-329-01	BUTTON (COUNTER)	
68	1-690-888-11	WIRE, FLAT TYPE (31 CORE)	
69	1-690-901-11	WIRE (FLAT TYPE) (5 CORE)	
70	4-951-620-11	SCREW +BVTP 2.6X8	
71	X-3364-743-1	LID (B) ASSY, CASSETTE	
72	3-377-328-01	BUTTON (EJECT)	
73	3-359-906-01	SPRING, COMPRESSION	
74	3-354-932-01	BUTTON (POWER)	
75	3-377-334-01	KNOB (REC)	
76	3-367-431-01	KNOB (BAL)	
77	3-308-823-11	SPRING	
78	3-377-335-01	WINDOW (M)	
79	3-683-421-01	SCREW PTPWH 2.6X8	

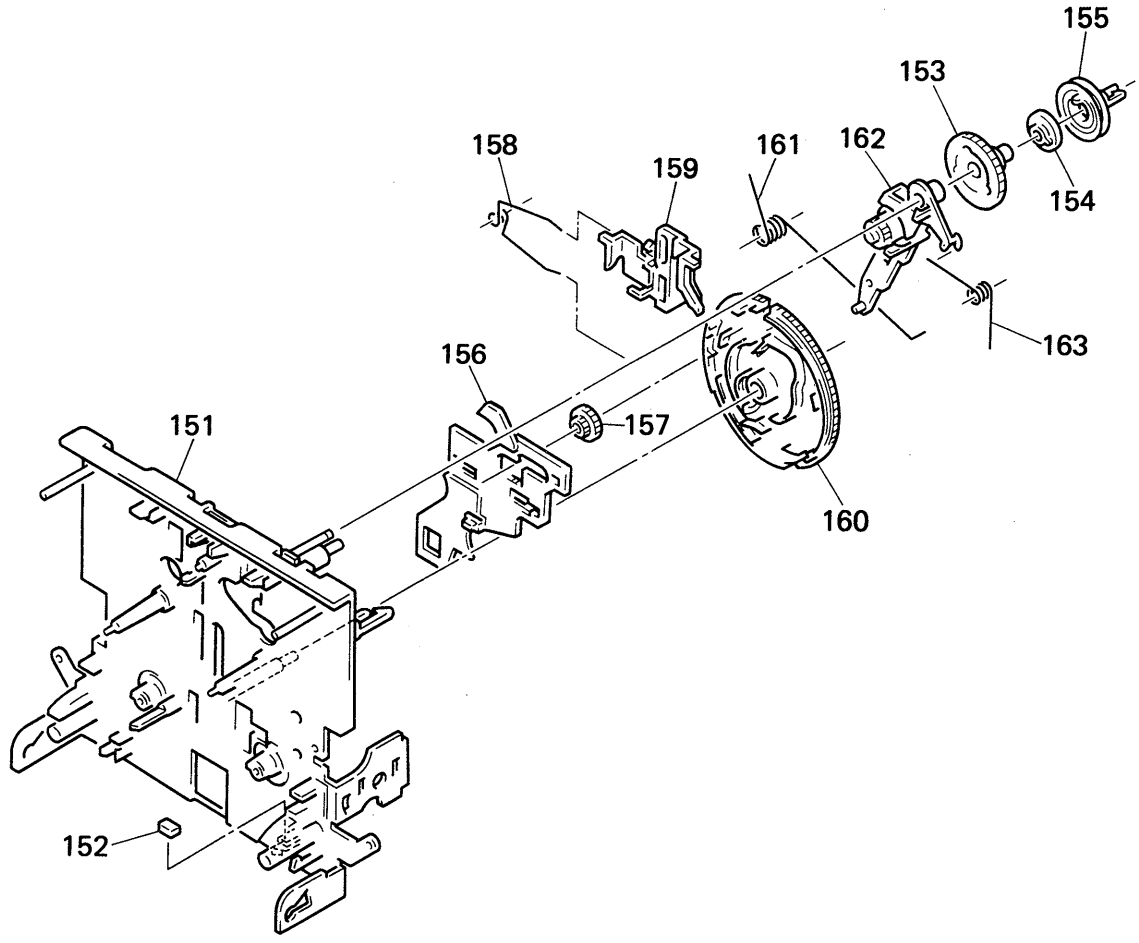
6-3. MECHANISM SECTION 1
(TCM-190VA12CS)
(TCM-190VB12CS)



Ref. No.	Part No.	Description	Remark
101	3-359-455-01	SPRING, TORSION	
102	3-363-868-01	SPRING (HEAD CHASSIS), TENSION	
103	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY	
104	3-343-484-01	SPRING, COMPRESSION	
105	3-359-450-01	PLATE, GROUND	
106	3-356-713-01	WASHER	
107	3-319-716-01	GUIDE, TAPE (DECK A)	
108	X-3359-406-1	FLYWHEEL (FWD) COMPLETE ASSY	
109	X-3359-404-1	TABLE ASSY, REEL	
110	3-359-424-01	GEAR (REV GEAR)	
111	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF	
112	3-342-419-01	HOLDER (S SENSER A)	
113	3-359-466-01	BELT (FR) SQUARE	
114	3-359-364-01	WASHER (TAPE GUIDE)	
* 115	1-634-841-14	SW-A BOARD (DECK A)	

Ref. No.	Part No.	Description	Remark
116	3-359-467-01	BELT (1 WAY FLAT BELT)	
117	3-575-321-11	RETAINER, THRUST, CAPSTAN	
* 118	3-359-436-01	BASE (THRUST RETAINER), FITTING	
119	3-359-414-01	SCREW (+PTPWH 2X23)	
120	3-362-308-01	CAP (REEL)	
121	3-359-446-01	SCREW (AZIMUTH ADJUSTMENT)	
122	X-3362-078-1	TABLE ASSY (B), REEL	
* 123	A-2006-755-A	AUDIO BOARD, COMPLETE (DECK A)	
* 123	A-2006-756-A	AUDIO BOARD, COMPLETE (DECK B)	
HE101	1-543-673-11	HEAD, MAGNETIC (ERASE) (DECK B)	
HP101	1-543-920-11	HEAD, MAGNETIC (PLAYBACK) (DECK A)	
HRP101	1-543-919-11	HEAD, MAGNETIC (RECORD/PLAYBACK) (DECK B)	
M1	X-3359-417-1	MOTOR ASSY, CAPSTAN	
M2	X-3363-501-1	MOTOR ASSY, REEL	

6-4. MECHANISM SECTION 2



Ref. No.	Part No.	Description	Remark
151	X-3359-416-1	CHASSIS (ONE) ASSY, MECHANICAL	
152	3-359-469-01	SPACER	
153	3-359-419-01	GEAR (FR GEAR)	
154	3-359-421-01	CLUTCH (REEL DISK)	
155	3-359-418-01	PULLEY (FR PULLEY)	
* 156	3-359-415-01	SLIDER (TRIGGER SLIDER)	
157	3-359-448-01	GEAR (TRIGGER)	

Ref. No.	Part No.	Description	Remark
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	

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....: μA...., uPA....: μPA....
  uPB....: μPB...., uPC....: μPC....
  uPD....: μPD....
- CAPACITORS
  uF: μF
- COILS
  uH: μH

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-2006-755-A	AUDIO BOARD, COMPLETE (DECK A)			
		**********			
		< CAPACITOR >			
C11	1-163-133-00	CERAMIC CHIP	470PF	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	1-163-133-00	CERAMIC CHIP	470PF	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	1-580-411-11	SOCKET, CONNECTOR 4P			
* 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 >			
JW1	1-216-295-00	METAL CHIP	0	5%	1/10W
JW51	1-216-296-00	METAL CHIP	0	5%	1/8W
JW52	1-216-296-00	METAL CHIP	0	5%	1/8W
JW53	1-216-296-00	METAL CHIP	0	5%	1/8W
JW54	1-216-296-00	METAL CHIP	0	5%	1/8W
		< TRANSISTOR >			
Q71	8-729-602-36	TRANSISTOR 2SA1602			
		< RESISTOR >			
R11	1-216-107-00	METAL CHIP	270K	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	1-216-107-00	METAL CHIP	270K	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 >			
RV11	1-238-012-11	RES, ADJ, CARBON 1K			
RV21	1-238-012-11	RES, ADJ, CARBON 1K			
RV71	1-238-016-11	RES, ADJ, CARBON 10K			
RV72	1-238-016-11	RES, ADJ, CARBON 10K			
**********					
*	A-2006-756-A	AUDIO BOARD, COMPLETE (DECK B)			
		**********			
		< CAPACITOR >			
C11	1-163-133-00	CERAMIC CHIP	470PF	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	1-163-133-00	CERAMIC CHIP	470PF	5%	50V

AUDIO (DECK B)

Ref. No.	Part No.	Description			Remark
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	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C52	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C53	1-163-020-00	CERAMIC CHIP	0.0082uF	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	1-107-045-00	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 >

D31	8-719-988-62	DIODE	1SS355

< IC >

IC31	8-759-106-02	IC	uPC4570G2
IC81	8-759-106-56	IC	uPC1297CA

Ref. No.	Part No.	Description			Remark

< 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

< RESISTOR >

R11	1-216-107-00	METAL CHIP	270K	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	1-216-107-00	METAL CHIP	270K	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	1-216-091-00	METAL CHIP	56K	5%	1/10W
R52	1-216-091-00	METAL CHIP	56K	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	1-216-089-00	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
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

< VARIABLE RESISTOR >

RV11	1-238-012-11	RES, ADJ, CARBON 1K
RV21	1-238-012-11	RES, ADJ, CARBON 1K
RV71	1-238-016-11	RES, ADJ, CARBON 10K
RV72	1-238-016-11	RES, ADJ, CARBON 10K
RV81	1-241-122-11	RES, ADJ, CARBON 22K
RV91	1-241-122-11	RES, ADJ, CARBON 22K

AUDIO (DECK B) | SW-A (DECK A) | SW-A (DECK B) | SYSTEM CONTROL

Ref. No.	Part No.	Description	Remark
		< RELAY >	
RY31	1-515-726-11	RELAY	
		< TRANSFORMER >	
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	
**********			
*	1-634-841-14	SW-A BOARD (DECK A)	
		**********	
	3-343-419-01	HOLDER (S SENSER A)	
		< CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	
		< IC >	
IC81	8-719-710-03	DIODE 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 (STOP)	
S82	1-571-281-21	SWITCH, LEAF (CrO2)	
S86	1-571-281-21	SWITCH, LEAF (HALF)	
**********			
*	1-634-841-14	SW-A BOARD (DECK B)	
		**********	
	3-343-419-01	HOLDER (S SENSER A)	
		< CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	
		< IC >	
IC81	8-719-710-03	DIODE NJL5165K-B	

Ref. No.	Part No.	Description	Remark
		< RESISTOR >	
R81	1-249-414-11	CARBON 560 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 (STOP)	
S82	1-571-281-21	SWITCH, LEAF (CrO2)	
S83	1-571-281-21	SWITCH, LEAF (METAL)	
S84	1-571-281-21	SWITCH, LEAF (REC A)	
S86	1-571-281-21	SWITCH, LEAF (HALF)	
**********			
*	A-2006-737-A	SYSTEM CONTROL BOARD, COMPLETE (US, Canadian, UK, E)	
*	A-2006-839-A	SYSTEM CONTROL BOARD, COMPLETE (AEP)	
		**********	
*	1-533-213-31	HOLDER, FUSE	
*	1-562-327-00	SOCKET, CONNECTOR 3P	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
	7-682-547-04	SCREW +BVTT 3X6 (S)	
		< CAPACITOR >	
C101	1-124-927-11	ELECT 4.7uF 20% 100V	
C102	1-136-157-00	FILM 0.022uF 5% 50V	
C103	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C104	1-124-907-11	ELECT 10uF 20% 50V	
C105	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C106	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C107	1-136-174-00	FILM 0.56uF 5% 50V	
C108	1-136-171-00	FILM 0.33uF 5% 50V	
C109	1-124-907-11	ELECT 10uF 20% 50V	
C113	1-124-903-11	ELECT 1uF 20% 50V	
C114	1-124-902-00	ELECT 0.47uF 20% 50V	
C115	1-124-927-11	ELECT 4.7uF 20% 100V	
C116	1-161-375-00	CERAMIC 0.0022uF 20% 50V	
C151	1-123-382-00	ELECT 3.3uF 20% 100V	
C201	1-124-927-11	ELECT 4.7uF 20% 100V	
C202	1-136-157-00	FILM 0.022uF 5% 50V	
C203	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C204	1-124-907-11	ELECT 10uF 20% 50V	
C205	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C206	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C207	1-136-174-00	FILM 0.56uF 5% 50V	
C208	1-136-171-00	FILM 0.33uF 5% 50V	
C209	1-124-907-11	ELECT 10uF 20% 50V	
C213	1-124-903-11	ELECT 1uF 20% 50V	
C214	1-124-902-00	ELECT 0.47uF 20% 50V	

SYSTEM CONTROL

Ref. No.	Part No.	Description			Remark
C215	1-124-927-11	ELECT	4.7uF	20%	100V
C216	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C251	1-123-382-00	ELECT	3.3uF	20%	100V
C501	1-124-443-00	ELECT	100uF	20%	10V
C502	1-124-443-00	ELECT	100uF	20%	10V
C504	1-124-126-00	ELECT	47uF	20%	10V
C701	1-124-927-11	ELECT	4.7uF	20%	100V
C702	1-124-898-11	ELECT	4700uF	20%	16V
C703	1-124-898-11	ELECT	4700uF	20%	16V
C704	1-124-927-11	ELECT	4.7uF	20%	100V
C705	1-124-472-11	ELECT	470uF	20%	10V
C706	1-124-927-11	ELECT	4.7uF	20%	100V
C707	1-124-126-00	ELECT	47uF	20%	10V
C708	1-124-473-11	ELECT	1000uF	20%	10V
C709	1-124-473-11	ELECT	1000uF	20%	10V
C710	1-124-910-11	ELECT	47uF	20%	50V
C711	1-124-907-11	ELECT	10uF	20%	50V
C712	1-124-907-11	ELECT	10uF	20%	50V
C801	1-124-927-11	ELECT	4.7uF	20%	100V
C802	1-164-159-11	CERAMIC	0.1uF		50V
C803	1-164-159-11	CERAMIC	0.1uF		50V
C804	1-164-159-11	CERAMIC	0.1uF		50V
C805	1-124-472-11	ELECT	470uF	20%	10V
C806	1-124-902-00	ELECT	0.47uF	20%	50V
C807	1-124-907-11	ELECT	10uF	20%	50V
C808	1-136-165-00	FILM	0.1uF	5%	50V
C809	1-136-165-00	FILM	0.1uF	5%	50V
C810	1-162-288-31	CERAMIC	330PF	10%	50V
C811	1-162-288-31	CERAMIC	330PF	10%	50V
C812	1-124-120-11	ELECT	220uF	20%	25V

< CONNECTOR >

* CN501	1-568-824-11	SOCKET, CONNECTOR 5P	
CN502	1-506-468-11	CONNECTOR	3P, MALE
* CN503	1-564-506-11	PLUG, CONNECTOR 3P	
* CN701	1-564-510-11	PLUG, CONNECTOR 7P	
* CN702	1-568-954-11	PIN, CONNECTOR 5P	
* CN802	1-568-845-11	SOCKET, CONNECTOR 31P	
* CN803	1-568-828-11	SOCKET, CONNECTOR 9P	
* CN804	1-568-828-11	SOCKET, CONNECTOR 9P	
CN805	1-691-916-11	CONNECTOR, BOARD TO BOARD	
CN806	1-691-916-11	CONNECTOR, BOARD TO BOARD	
CN807	1-691-916-11	CONNECTOR, BOARD TO BOARD	
* CN808	1-568-830-11	SOCKET, CONNECTOR 11P	
* CN809	1-568-830-11	SOCKET, CONNECTOR 11P	
* CN901	1-568-824-11	SOCKET, CONNECTOR 5P	
* CN902	1-568-873-11	SOCKET, CONNECTOR 31P	

Ref. No.	Part No.	Description		Remark

< DIODE >

D151	8-719-987-63	DIODE	1N4148M	
D251	8-719-987-63	DIODE	1N4148M	
D501	8-719-987-63	DIODE	1N4148M	
D502	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	8-719-200-77	DIODE	10E2N	
D706	8-719-200-77	DIODE	10E2N	
D707	8-719-987-63	DIODE	1N4148M	
D708	8-719-000-78	DIODE	HZS7A1L	
D709	8-719-933-33	DIODE	HZS6A1L	
D710	8-719-933-33	DIODE	HZS6A1L	
D711	8-719-200-77	DIODE	10E2N	
D712	8-719-987-63	DIODE	1N4148M	
D713	8-719-987-63	DIODE	1N4148M	
D714	8-719-000-78	DIODE	HZS7A1L	
D802	8-719-987-63	DIODE	1N4148M	
D803	8-719-987-63	DIODE	1N4148M	
D804	8-719-987-63	DIODE	1N4148M	
D805	8-719-987-63	DIODE	1N4148M	
D806	8-719-987-63	DIODE	1N4148M	
D807	8-719-987-63	DIODE	1N4148M	
D808	8-719-987-63	DIODE	1N4148M	
D809	8-719-987-63	DIODE	1N4148M	
D810	8-719-200-77	DIODE	10E2N	

< IC >

IC501	8-752-059-55	IC	CXA1331S
IC502	8-759-140-53	IC	MC14053BCP
IC503	8-752-055-62	IC	CXA1579P
IC504	8-759-945-58	IC	RC4558P
IC505	8-759-945-58	IC	RC4558P
IC701	8-759-945-58	IC	RC4558P
IC801	8-759-062-38	IC	M50941-712SP
IC802	8-759-207-05	IC	TA7272P
IC901	8-741-100-48	IC	SBX1610-59

< JACK >

J501	1-565-258-11	JACK, PIN 4P (LINE)
J901	1-507-796-71	JACK (HEADPHONES)

< COIL >

* L801	1-420-872-00	COIL, AIR CORE
* L802	1-420-872-00	COIL, AIR CORE

SYSTEM CONTROL

Ref. No.	Part No.	Description	Remark
		< FILTER >	
LPF101	1-231-388-00	FILTER, LOW PASS	
LPF201	1-231-388-00	FILTER, LOW PASS	
		< TRANSISTOR >	
Q102	8-729-900-80	TRANSISTOR DTC114ES	
Q103	8-729-900-74	TRANSISTOR DTC143TS	
Q151	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q202	8-729-900-80	TRANSISTOR DTC114ES	
Q203	8-729-900-74	TRANSISTOR DTC143TS	
Q251	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q501	8-729-900-65	TRANSISTOR DTA144ES	
Q502	8-729-900-89	TRANSISTOR DTC144ES	
Q511	8-729-900-65	TRANSISTOR DTA144ES (NEW)	
Q701	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q702	8-729-209-15	TRANSISTOR 2SD2012	
Q703	8-729-900-74	TRANSISTOR DTC143TS	
Q704	8-729-900-74	TRANSISTOR DTC143TS	
Q705	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q706	8-729-209-15	TRANSISTOR 2SD2012	
Q707	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q708	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q801	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q802	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q803	8-729-900-65	TRANSISTOR DTA144ES	
Q804	8-729-900-65	TRANSISTOR DTA144ES	
Q805	8-729-900-80	TRANSISTOR DTC114ES	
Q806	8-729-115-28	TRANSISTOR BN1L3Z-K	
Q807	8-729-801-93	TRANSISTOR 2SD1387	
Q808	8-729-801-93	TRANSISTOR 2SD1387	
Q809	8-729-900-80	TRANSISTOR DTC114ES	
Q810	8-729-900-89	TRANSISTOR DTC144ES	
Q811	8-729-900-61	TRANSISTOR DTA114ES	
Q812	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q813	8-729-900-65	TRANSISTOR DTA144ES	
Q814	8-729-900-65	TRANSISTOR DTA144ES	
Q815	8-729-900-80	TRANSISTOR DTC114ES	
Q816	8-729-900-80	TRANSISTOR DTC114ES	
Q817	8-729-900-80	TRANSISTOR DTC114ES	
Q818	8-729-900-89	TRANSISTOR DTC144ES	
Q901	8-729-900-65	TRANSISTOR DTA144ES	
		< RESISTOR >	
R101	1-249-433-11	CARBON 22K 5% 1/4W	
R102	1-249-417-11	CARBON 1K 5% 1/4W	
R103	1-249-421-11	CARBON 2.2K 5% 1/4W	
R106	1-247-838-00	CARBON 2K 5% 1/4W	
R108	1-247-842-11	CARBON 3K 5% 1/4W	
R109	1-249-423-11	CARBON 3.3K 5% 1/4W	
R110	1-249-428-11	CARBON 8.2K 5% 1/4W	
R111	1-247-864-11	CARBON 24K 5% 1/4W	
R112	1-249-414-11	CARBON 560 5% 1/4W	
R116	1-249-421-11	CARBON 2.2K 5% 1/4W	
R117	1-249-429-11	CARBON 10K 5% 1/4W	
R118	1-249-417-11	CARBON 1K 5% 1/4W	
R126	1-249-441-11	CARBON 100K 5% 1/4W	
R151	1-249-429-11	CARBON 10K 5% 1/4W	
R152	1-249-428-11	CARBON 8.2K 5% 1/4W	
R153	1-249-431-11	CARBON 15K 5% 1/4W	
R154	1-249-409-11	CARBON 220 5% 1/4W	
R155	1-249-429-11	CARBON 10K 5% 1/4W	
R156	1-249-430-11	CARBON 12K 5% 1/4W	
R157	1-249-421-11	CARBON 2.2K 5% 1/4W	
R158	1-247-864-11	CARBON 24K 5% 1/4W	
R159	1-249-434-11	CARBON 27K 5% 1/4W	
R160	1-249-408-11	CARBON 180 5% 1/4W	
R201	1-249-433-11	CARBON 22K 5% 1/4W	
R202	1-249-417-11	CARBON 1K 5% 1/4W	
R203	1-249-421-11	CARBON 2.2K 5% 1/4W	
R206	1-247-838-00	CARBON 2K 5% 1/4W	
R208	1-247-842-11	CARBON 3K 5% 1/4W	
R209	1-249-423-11	CARBON 3.3K 5% 1/4W	
R210	1-249-428-11	CARBON 8.2K 5% 1/4W	
R211	1-247-864-11	CARBON 24K 5% 1/4W	
R212	1-249-414-11	CARBON 560 5% 1/4W	
R216	1-249-421-11	CARBON 2.2K 5% 1/4W	
R217	1-249-429-11	CARBON 10K 5% 1/4W	
R218	1-249-417-11	CARBON 1K 5% 1/4W	
R226	1-249-441-11	CARBON 100K 5% 1/4W	
R251	1-249-429-11	CARBON 10K 5% 1/4W	
R252	1-249-428-11	CARBON 8.2K 5% 1/4W	
R253	1-249-431-11	CARBON 15K 5% 1/4W	
R254	1-249-409-11	CARBON 220 5% 1/4W	
R255	1-249-429-11	CARBON 10K 5% 1/4W	
R256	1-249-430-11	CARBON 12K 5% 1/4W	
R257	1-249-421-11	CARBON 2.2K 5% 1/4W	
R258	1-247-864-11	CARBON 24K 5% 1/4W	
R259	1-249-434-11	CARBON 27K 5% 1/4W	
R260	1-249-408-11	CARBON 180 5% 1/4W	
R501	1-249-433-11	CARBON 22K 5% 1/4W	
R502	1-249-429-11	CARBON 10K 5% 1/4W	
R504	1-215-455-00	METAL 27K 1% 1/6W	
R505	1-249-417-11	CARBON 1K 5% 1/4W	
R511	1-249-417-11	CARBON 1K 5% 1/4W	
R512	1-249-441-11	CARBON 100K 5% 1/4W	
R516	1-215-455-00	METAL 27K 1% 1/6W	
R526	1-249-429-11	CARBON 10K 5% 1/4W	
R513	1-249-425-11	CARBON 4.7K 5% 1/4W	
R514	1-249-433-11	CARBON 22K 5% 1/4W	
R515	1-249-433-11	CARBON 22K 5% 1/4W	

SYSTEM CONTROL

Ref. No.	Part No.	Description			Remark
R701	1-249-421-11	CARBON	2.2K	5%	1/4W
R702	1-249-425-11	CARBON	4.7K	5%	1/4W
R704	1-249-429-11	CARBON	10K	5%	1/4W
R705	1-249-425-11	CARBON	4.7K	5%	1/4W
R706	1-249-425-11	CARBON	4.7K	5%	1/4W
R707	1-249-427-11	CARBON	6.8K	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	1-249-419-11	CARBON	1.5K	5%	1/4W
R711	1-249-429-11	CARBON	10K	5%	1/4W
R712	1-249-417-11	CARBON	1K	5%	1/4W
R713	1-249-427-11	CARBON	6.8K	5%	1/4W
R714	1-249-427-11	CARBON	6.8K	5%	1/4W
R715	1-249-430-11	CARBON	12K	5%	1/4W
R716	1-249-429-11	CARBON	10K	5%	1/4W
R717	1-249-421-11	CARBON	2.2K	5%	1/4W
⚠R799	1-219-137-11	RES, FUSE	0.33	10%	1/4W
R801	1-249-433-11	CARBON	22K	5%	1/4W
R802	1-249-428-11	CARBON	8.2K	5%	1/4W
R803	1-247-836-11	CARBON	1.6K	5%	1/4W
R804	1-249-433-11	CARBON	22K	5%	1/4W
R805	1-249-437-11	CARBON	47K	5%	1/4W
R806	1-247-903-00	CARBON	1M	5%	1/4W
R807	1-249-433-11	CARBON	22K	5%	1/4W
R808	1-249-433-11	CARBON	22K	5%	1/4W
R809	1-249-421-11	CARBON	2.2K	5%	1/4W
R810	1-249-421-11	CARBON	2.2K	5%	1/4W
R811	1-247-862-11	CARBON	20K	5%	1/4W
R812	1-249-429-11	CARBON	10K	5%	1/4W
R813	1-247-862-11	CARBON	20K	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	1-249-434-11	CARBON	27K	5%	1/4W
R818	1-249-429-11	CARBON	10K	5%	1/4W
R819	1-249-429-11	CARBON	10K	5%	1/4W
R820	1-249-434-11	CARBON	27K	5%	1/4W
R821	1-249-421-11	CARBON	2.2K	5%	1/4W
R822	1-249-429-11	CARBON	10K	5%	1/4W
R823	1-249-421-11	CARBON	2.2K	5%	1/4W
R824	1-249-429-11	CARBON	10K	5%	1/4W
R825	1-249-422-11	CARBON	2.7K	5%	1/4W
R826	1-249-422-11	CARBON	2.7K	5%	1/4W
R827	1-249-422-11	CARBON	2.7K	5%	1/4W
R828	1-249-429-11	CARBON	10K	5%	1/4W
R830	1-249-429-11	CARBON	10K	5%	1/4W
R831	1-249-424-11	CARBON	3.9K	5%	1/4W
R832	1-247-840-00	CARBON	2.4K	5%	1/4W
R833	1-249-421-11	CARBON	2.2K	5%	1/4W
R834	1-249-421-11	CARBON	2.2K	5%	1/4W
R835	1-249-430-11	CARBON	12K	5%	1/4W
R836	1-249-433-11	CARBON	22K	5%	1/4W
R840	1-249-433-11	CARBON	22K	5%	1/4W
R841	1-249-433-11	CARBON	22K	5%	1/4W
R842	1-249-405-11	CARBON	100	5%	1/4W
R843	1-249-430-11	CARBON	12K	5%	1/4W
R844	1-249-433-11	CARBON	22K	5%	1/4W
R848	1-249-433-11	CARBON	22K	5%	1/4W
R849	1-249-433-11	CARBON	22K	5%	1/4W
R850	1-249-405-11	CARBON	100	5%	1/4W
R851	1-249-421-11	CARBON	2.2K	5%	1/4W
R901	1-249-407-11	CARBON	150	5%	1/4W
R902	1-249-409-11	CARBON	220	5%	1/4W
R903	1-249-411-11	CARBON	330	5%	1/4W
R904	1-249-413-11	CARBON	470	5%	1/4W
R905	1-249-415-11	CARBON	680	5%	1/4W
R906	1-249-417-11	CARBON	1K	5%	1/4W
R907	1-249-420-11	CARBON	1.8K	5%	1/4W
R908	1-249-424-11	CARBON	3.9K	5%	1/4W
R909	1-249-407-11	CARBON	150	5%	1/4W
R910	1-249-409-11	CARBON	220	5%	1/4W
R911	1-249-411-11	CARBON	330	5%	1/4W
R912	1-249-413-11	CARBON	470	5%	1/4W
R913	1-249-415-11	CARBON	680	5%	1/4W
R914	1-249-417-11	CARBON	1K	5%	1/4W
R915	1-249-420-11	CARBON	1.8K	5%	1/4W
R918	1-249-417-11	CARBON	1K	5%	1/4W

< VARIABLE RESISTOR >

RV101	1-238-016-11	RES, ADJ, CARBON 10K
RV201	1-238-016-11	RES, ADJ, CARBON 10K
RV901	1-241-901-11	RES, VAR, CARBON 50K/50K (BALANCE)
RV902	1-241-133-11	RES, VAR, CARBON 50K/50K (REC LEVEL)

< SWITCH >

S701	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)
S901	1-554-303-21	SWITCH, TACTILE (■)
S904	1-554-303-21	SWITCH, TACTILE (◁◁)
S905	1-554-303-21	SWITCH, TACTILE (▷▷)
S906	1-554-303-21	SWITCH, TACTILE (●)
S907	1-554-303-21	SWITCH, TACTILE (HIGH SPEED)
S908	1-554-303-21	SWITCH, TACTILE (NORMAL SPEED)
S909	1-554-303-21	SWITCH, TACTILE (COUNTER RESET)
S911	1-554-303-21	SWITCH, TACTILE (■)
S912	1-554-303-21	SWITCH, TACTILE (❚❚)

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.

SYSTEM CONTROL

Ref. No.	Part No.	Description	Remark
S915	1-554-303-21	SWITCH, TACTILE (⏏)	
S916	1-554-303-21	SWITCH, TACTILE (◀◀)	
S917	1-554-303-21	SWITCH, TACTILE (▶▶)	
S918	1-554-303-21	SWITCH, TACTILE (COUNTER RESET)	
S919	1-554-303-21	SWITCH, TACTILE (▶)	
S920	1-554-303-21	SWITCH, TACTILE (▶)	
S921	1-692-126-11	SWITCH, SLIDE (DOLBY)	
		< FLUORESCENT INDICATOR >	
VFD901	1-519-712-11	INDICATOR TUBE, FLUORESCENT	
		< VIBRATOR >	
X801	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	
**********			
		MISCELLANEOUS	
		**********	
⚠2	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
⚠4	1-551-188-XX	CORD, POWER (E)	
⚠4	1-555-795-00	CORD, POWER, EULO PLUG (AEP)	
⚠4	1-556-035-00	CORD, POWER (UK)	
⚠4	1-558-945-11	CORD, POWER (POLAR. SPT-1) (US, Canadian)	
10	1-690-891-11	WIRE, FLAT TYPE (11 CORE)	
11	1-690-889-11	WIRE, FLAT TYPE (9 CORE)	
12	1-690-890-11	WIRE, FLAT TYPE (9 CORE)	
68	1-690-888-11	WIRE, FLAT TYPE (31 CORE)	
69	1-690-901-11	WIRE (FLAT TYPE) (5 CORE)	
⚠F701	1-532-285-00	FUSE (AEP, UK, E)	
⚠F701	1-576-103-11	FUSE (US, Canadian)	
⚠F702	1-532-285-00	FUSE (AEP, UK, E)	
⚠F702	1-576-103-11	FUSE (US, Canadian)	
HE101	1-543-673-11	HEAD, MAGNETIC (ERASE) (DECK B)	
HP101	1-543-920-11	HEAD, MAGNETIC (PLAYBACK)	
HRP101	1-543-919-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
M1	X-3359-417-1	MOTOR ASSY, CAPSTAN	
M2	X-3363-501-1	MOTOR ASSY, REEL	
⚠T901	1-450-837-11	TRANSFORMER, POWER (US, Canadian)	
⚠T901	1-450-838-11	TRANSFORMER, POWER (AEP, UK)	
⚠T901	1-450-839-11	TRANSFORMER, POWER (E)	
⚠VS901	1-691-155-11	VOLTAGE SELECTOR (E)	
**********			

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-558-271-11	CORD, CONNECTION	
*	3-366-701-61	INDIVIDUAL CARTON	
*	3-704-343-01	SHEET (STANDARD), PROTECTION	
	3-754-778-11	MANUAL, INSTRUCTION (AEP, E) (English, French, Spanish, Portuguese)	
	3-754-778-21	MANUAL, INSTRUCTION (US, Canadian, UK) (English)	
	3-754-778-31	MANUAL, INSTRUCTION (Canadian) (French)	
	3-754-778-41	MANUAL, INSTRUCTION (AEP) (Germany, Dutch, Italian, Swedish)	
	3-754-778-61	MANUAL, INSTRUCTION (E) (Chinese)	
	3-754-778-71	MANUAL, INSTRUCTION (AEP) (Danisw, Finnish)	
	9-910-999-33	INSTRUCTION (US)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-621-773-93	SCREW (PANEL 2.6 TP2)	
#2	7-621-773-95	SCREW +BVTT 2.6X6 (S)	
#3	7-621-849-00	SCREW (BV/RING)	
#4	7-682-547-04	SCREW +BVTT 3X6 (S)	
#5	7-682-548-09	SCREW +BVTT 3X8 (S)	
#6	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#7	7-682-547-09	SCREW +BVTT 3X6 (S)	
#8	7-621-772-58	SCREW (+B2X10)	

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.

9-956-976-11

Sony Corporation
Audio Group

English
92D0296-1
Printed in Japan

Published by Customer Relations and Service Group

TC-W490

SONY
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

CORRECTION-1

File this Correction with the Service Manual.

• SECTION 4 ADJUSTMENTS (Page 9)

(Correct)

Torque Measurement

Torque	Torque	Meter reading
Forward	CQ-102C	30 to 65g•cm (0.42 to 0.9oz•inch)
Forward back tension	CQ-102C	DECK A : 1 to 6g•cm (0.014 to 0.08 oz•inch) DECK B : 2 to 9g•cm (0.03 to 0.12 oz•inch)
FF/REW	CQ-201B	70 to 120g•cm (0.98 to 1.67 oz•inch)

• SECTION 6 CHASSIS SECTION (Page 33)

(Added)

Ref. No.	Part No.	Description	Remark
5	4-943-148-42	FOOT (AEP, UK, E)	

9-956-976-91

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Audio Group

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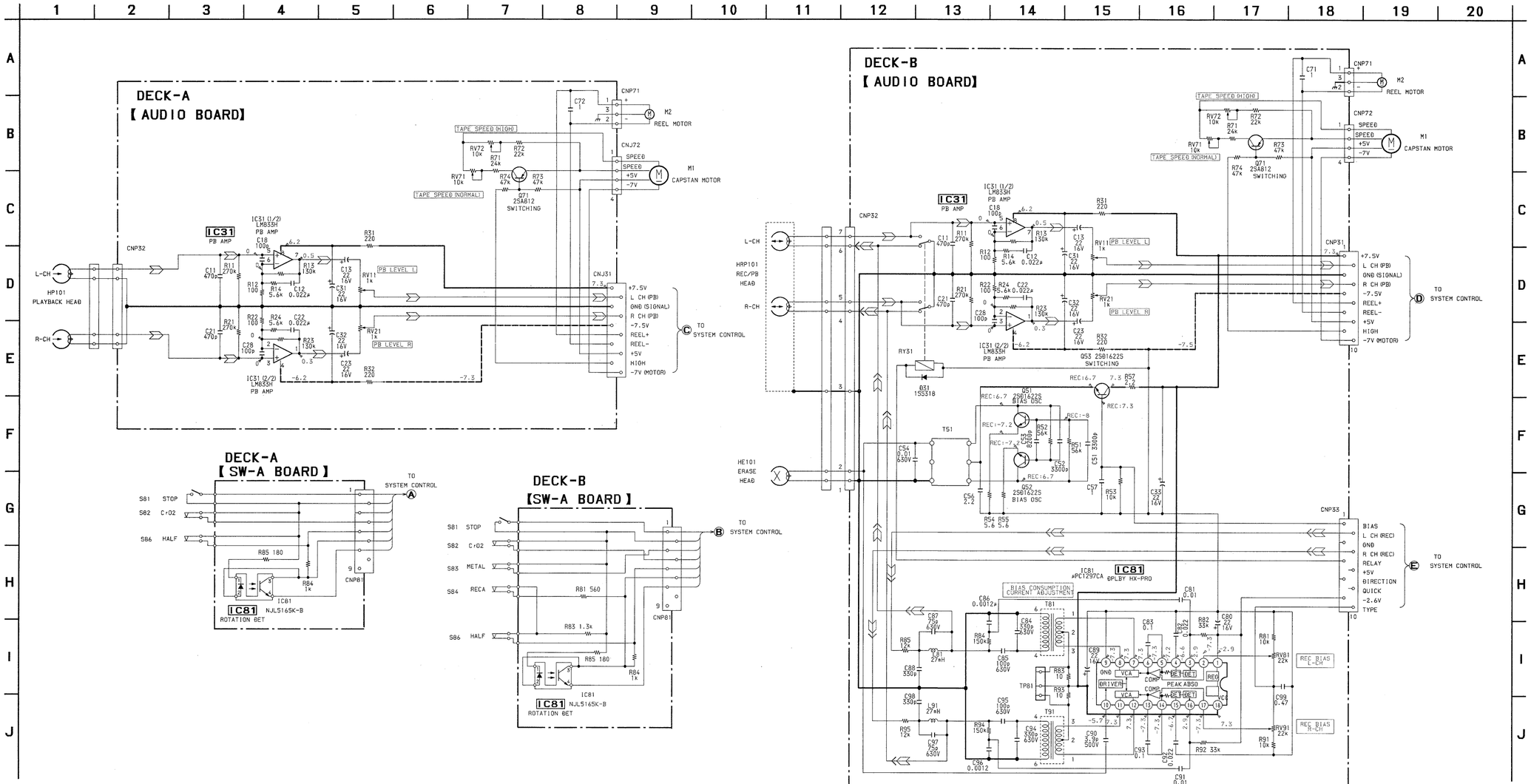

Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- ▭▭▭ : B+ Line
- ▭ ▭ ▭ : B − Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal.
- no mark : STOP
  - ▷ : FWD
  - ◁ : REV
  - ◎ : REC
- Voltages are taken with a VOM (Input impedence 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ▷ : PB (DECK A)
  - ▷ : REC (DECK B)