TC-FX170

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

SPECIFICATIONS

Recording system
4-track 2-channel stereo
Fast winding Approx. 120 sec. (with C-60 cassette)
Bias AC Bias
Signal-to-noise ratio (at peak level)

Cassette \ Dolby NR switch	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-SLT/S)	58 dB	66 dB	73 dB
TYPE II (Sony UX-S)	57 dB	65 dB	72 dB
TYPE I (Sony HF-S)	55 dB	63 dB	70 dB

Total harmonic distortion
1.0% (with Sony METAL-SLT/S cassettes)

Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-SLT/S)	30 – 15,000 Hz (±3 dB, IEC) 30 – 13,000 Hz [±3 dB 0VU (– 4 dB) recording]
TYPE II cassette (Sony UX-S)	30 – 14,000 Hz (±3 dB, IEC)
TYPE I cassette (Sony HF-S)	30 – 13,000 Hz (±3 dB, IEC)

Wow and flutter ±0.16% W. Peak (IEC)
0.11% WRMS (NAB)
±0.2% W Peak (DIN)

Model Name Using Similar Mechanism	TC-FX120
Tape Transport Mechanism Type	TCM-180VBN3

Inputs

Line inputs (phono jacks)	Sensitivity	77.5 mV
	Input impedance	47k ohms

Outputs

Line outputs (phono jacks)	Rated output level	0.32 V at a load impedance of 47k ohms
	Load impedance	Over 10k ohms
Headphone output (stereo phone jack)	Output level	0.2 mW at a load impedance of 32 ohms

General
Power requirements
US, Canadian Model:
120 V AC, 60 Hz
AEP Model:
220 V AC, 50/60 Hz
UK Model:
240 V AC, 50 Hz
E Model:
110 – 220 V AC, 220 – 240 V AC, 50/60 Hz

STEREO CASSETTE DECK
SONY

Power consumption	14 W
Dimensions	Approx. 430 × 123 × 286 mm (w/h/d) (17 × 4 7/8 × 11 3/8 inches) including projecting parts and controls
Weight	Approx. 3.5 kg (7 lbs 12 oz)

Supplied accessory

Audio connecting cords (2)

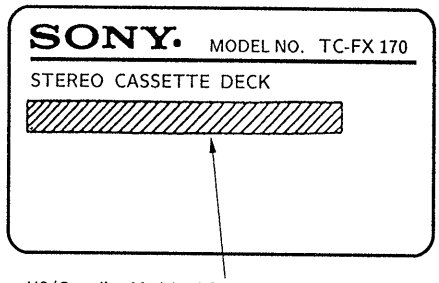
Design and specifications subject to change without notice.

Note

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

MODEL IDENTICATION

- Specification Label Printed on Back Panel -



US/Canadian Model : AC 120 V 60 Hz 14 W
AEP Model : AC 220 - 280 V ~ 50/60 Hz
UK Model : AC 240 V ~ 50/60 Hz
E Model : AC 110 - 120 V, 220 - 240 V ~ 50/60 Hz 15 W

TABLE OF CONTENTS

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.

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)

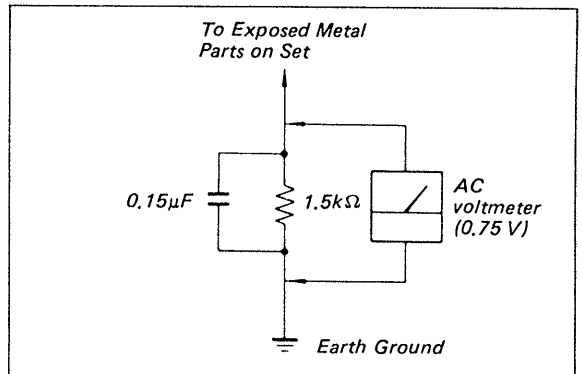


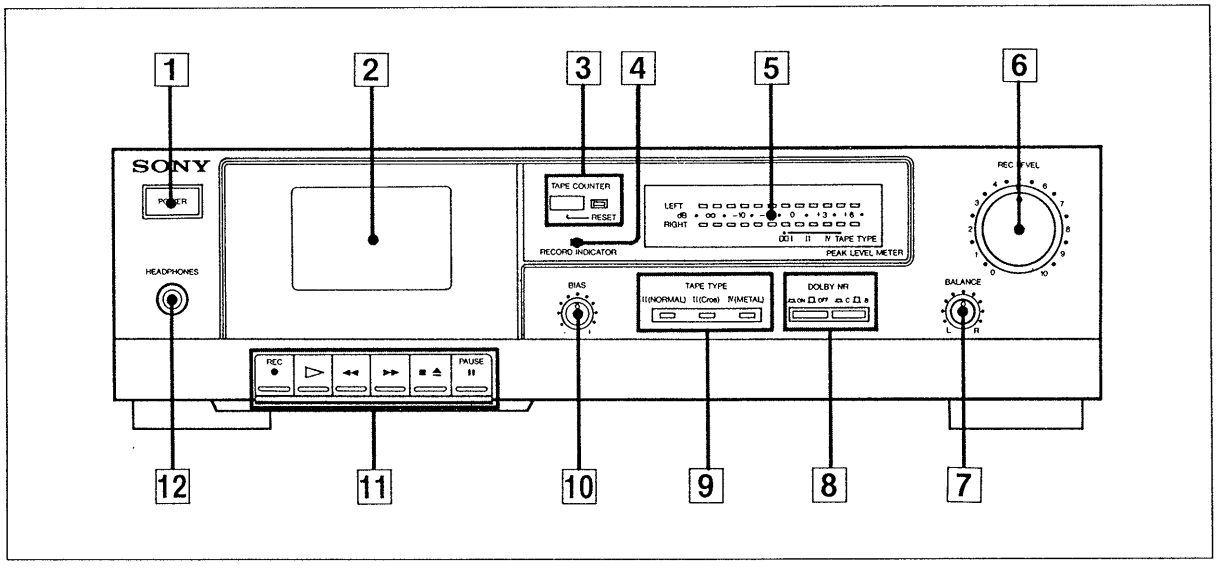
Fig. A. Using an AC voltmeter to check AC leakage.

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

Identification of Front Panel Parts



1 POWER switch

2 Cassette holder

3 TAPE COUNTER and RESET button

4 RECORD INDICATOR

5 PEAK LEVEL METER

6 REC (recording) LEVEL control

7 BALANCE control

8 DOLBY NR (Dolby Noise Reduction) buttons

9 TAPE TYPE indicators

10 BIAS control

11 Tape operation buttons
- ● REC (record) button
- ▶ (play) button
- ◀◀ (rewind) button
- ▶▶ (fast-forward) button
- ■⏏ (stop) and (eject) buttons
- ❚❚ PAUSE button

12 HEADPHONES jack (stereo phone jack)

SECTION 2
ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENTS

PRECAUTION

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

record/playback head	pinch roller
erase head	rubber belts
capstan	idler

2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply boltage unless otherwise noted.

Torque Measurement

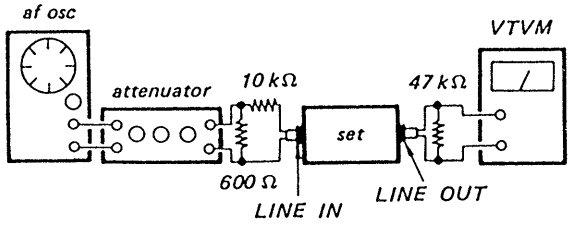
Torque	Torque	Meter reading
FWD	CQ-102C	30 to 70 g•cm (0.43 to 0.97 oz•inch)
FWD Back tension	CQ-102C	1.5 to 6 g•cm (0.02 to 0.07 oz•inch)
FF, REW	CQ-201B	63 g•cm or more (0.87 oz•inch or more)

2-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.
  DOLBY NR switch: OFF
- Standard Record:
  Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

— Record Mode —



Standard Input Level

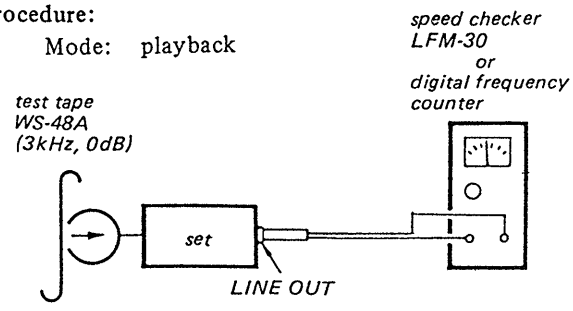
	LINE IN
source impedance	10 kΩ
input level	0.5 V(− 3.8 dBs)

Standard Output Level

	LINE OUT
load impedance	47 kΩ
output level	0.5 V(− 3.8 dBs)

Capstan Motor Speed Adjustment

Procedure:
Mode: playback

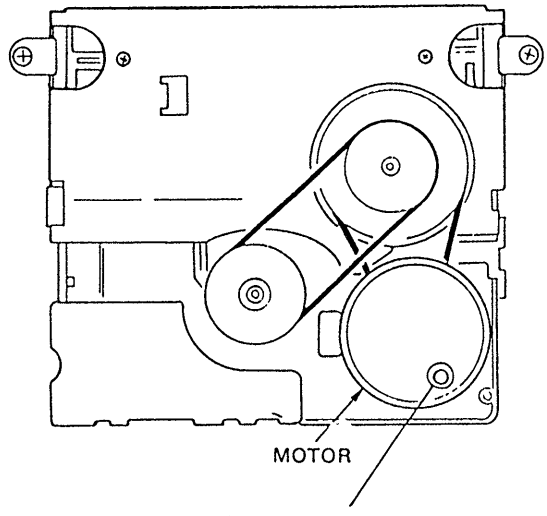


Specification:

Speed checker	Digital frequency counter
−0.3 ~ +0.3%	2,990 ~ 3,010 Hz

Frequency difference between the beginning and the end of the tape should be within 0.3% (10 Hz).

Adjustment Location

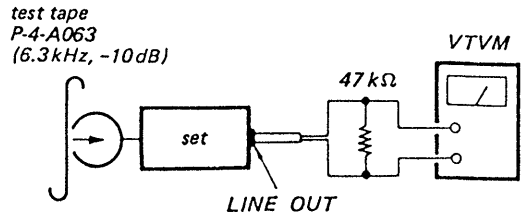


Adjust the speed by using screwdriver. When turning the screw clockwise, speed is faster.

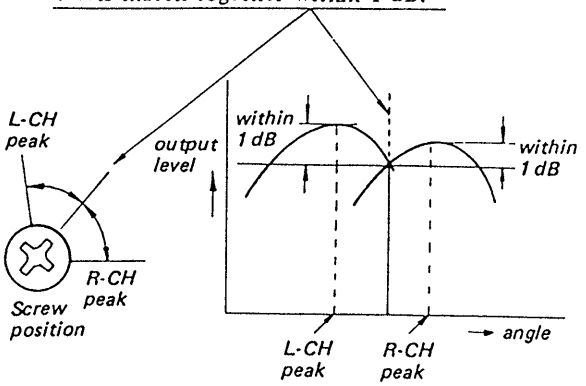
Record/Playback Head Azimuth Adjustment

Procedure:

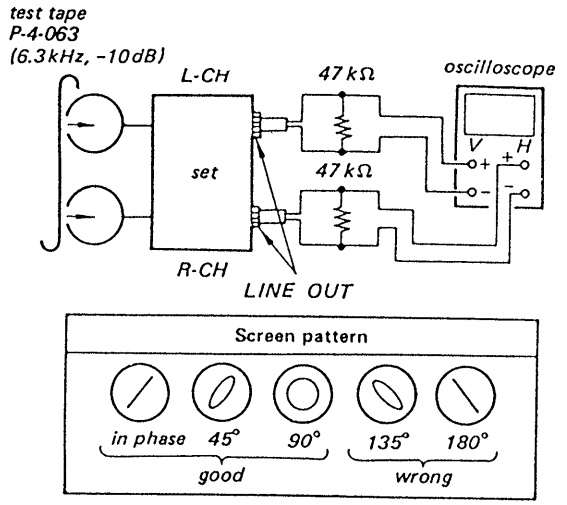
1. Mode: playback



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 1 dB.

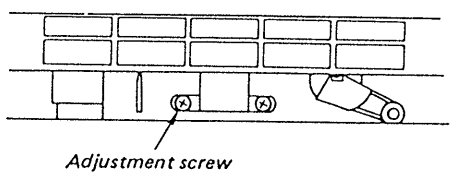


3. Phase Check
   Mode: playback



Adjustment Location:

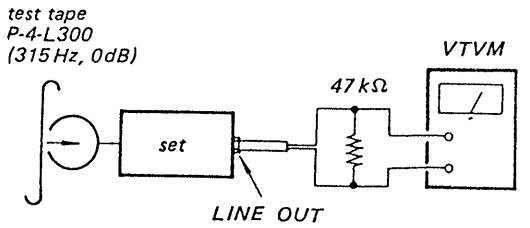
– Record/Playback head –



Playback Level Adjustment

Procedure:

1. Mode: playback



Adjust RV102 (L-CH) and RV202 (R-CH) so that the specification is met.

Specification:

Line OUT level: – 7.7 dBs ± 0.5 dB

Level difference between channels:
less than 0.5 dB

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

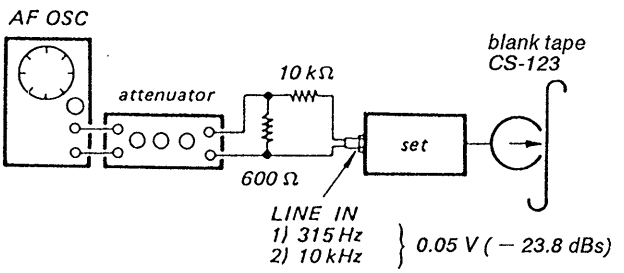
Record Bias Adjustment

Setting:

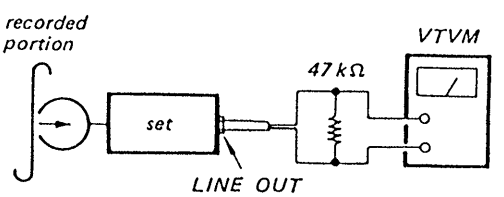
REC LEVEL control: standard record

Procedure:

1. Mode: record



2. Mode: playback



Confirm that the 10 kHz playback output is 0±0.5 dB, relative to the 315 Hz output. If necessary, adjust CT-301-1 (L-CH), CT301-2 (R-CH) and repeat the steps given above.

SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAM

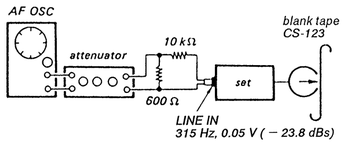
Record Level Adjustment

Setting:

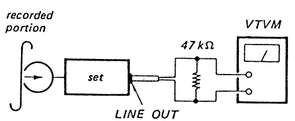
REC LEVEL control: standard record

Procedure:

1. Mode: record



2. Mode: playback

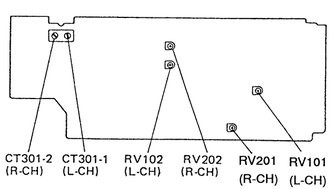


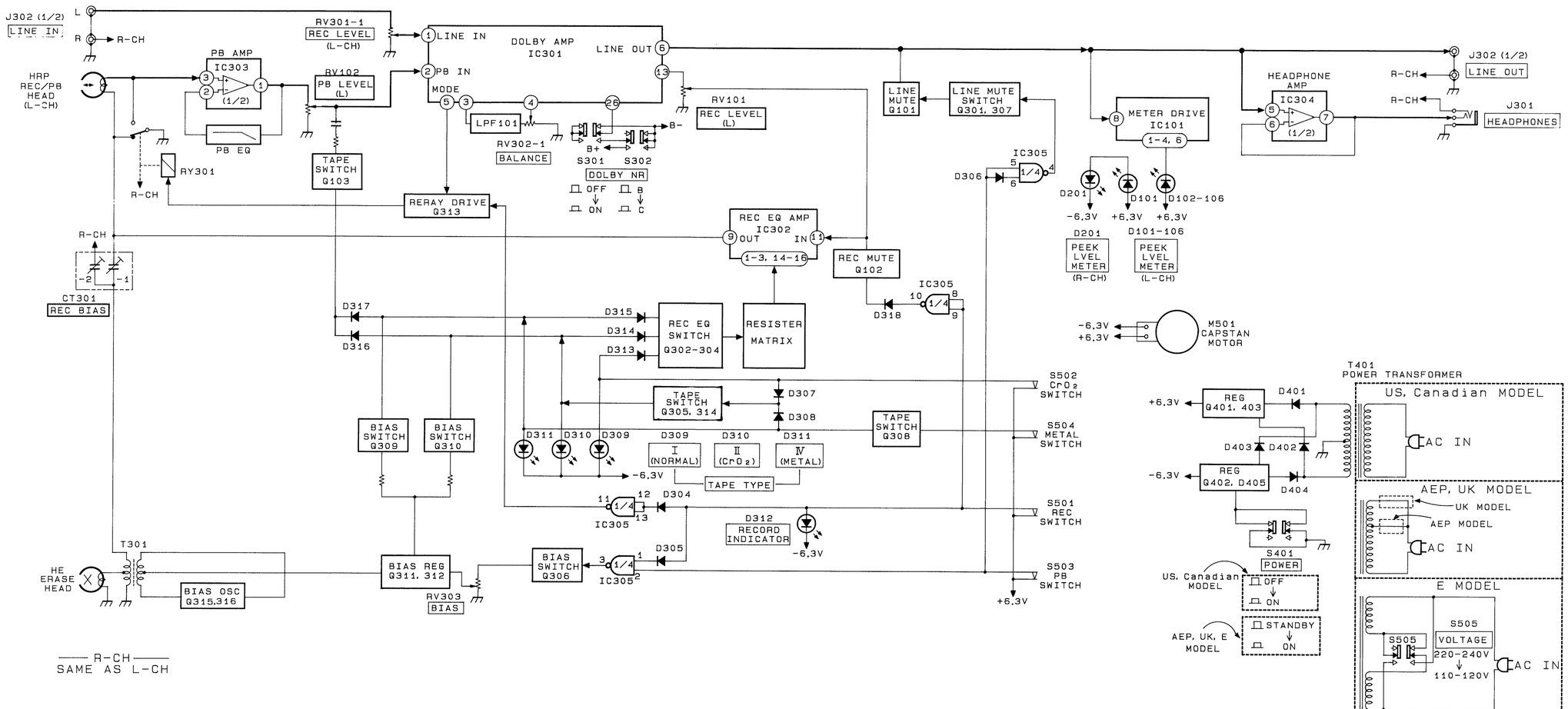
3. Playback the signal recorded in step 1. Confirm that the signal level is within the specification below. If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat the step 1-3.

Specification:

LINE OUT level: − 23.8 dBs ± 0.5 dB

Adjustment Location: audio board





● Semiconductor Lead Layouts

DTA114ES
DTA144ES
DTC114ES
DTC143TS
2SC2603-EF

2SA1175-HFE

2SB1094-L
2SD2012

2SC945-P

10E2N

SEL1210S-C

SEL4214S-C

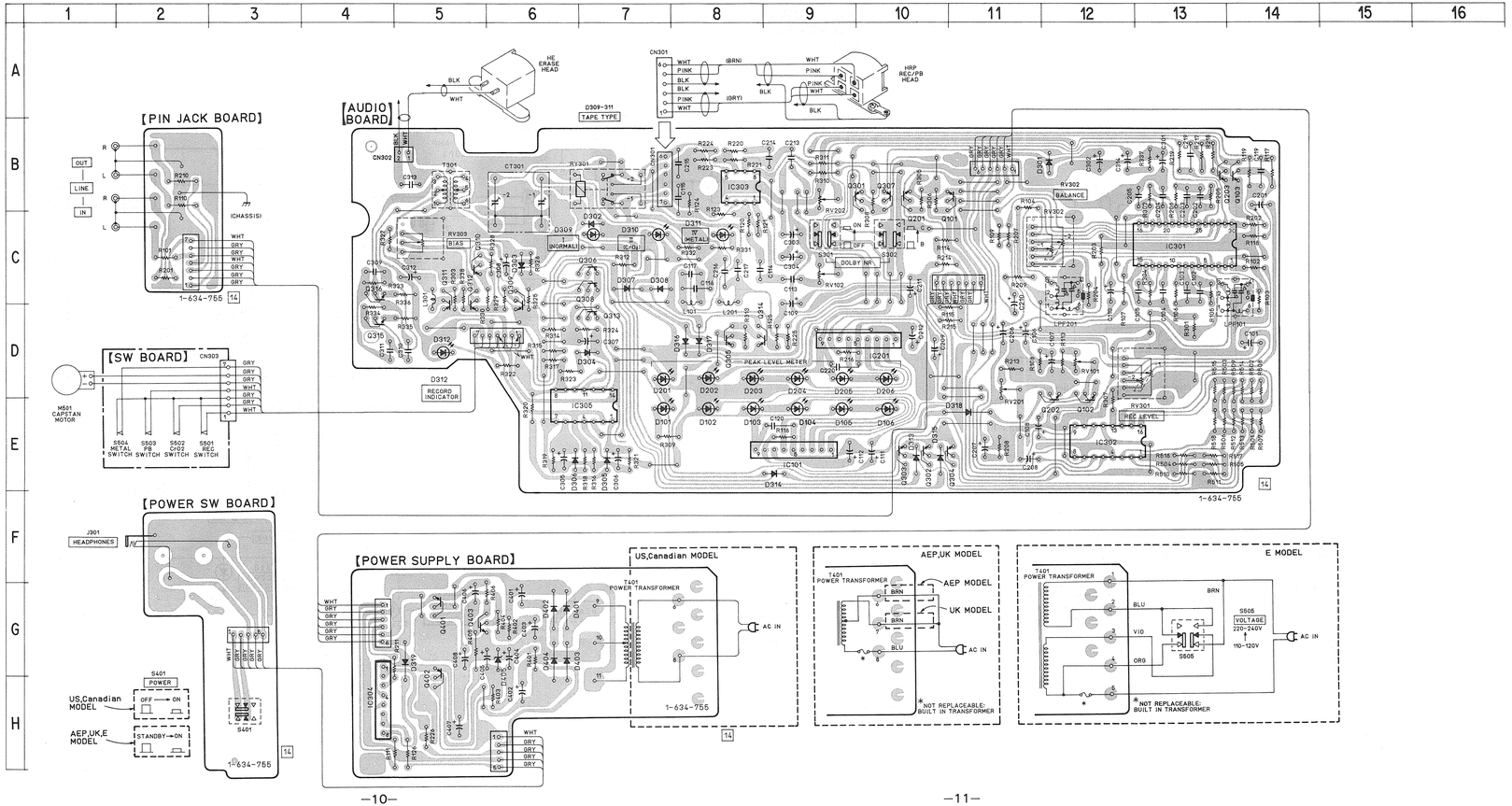
SEL4414E-C

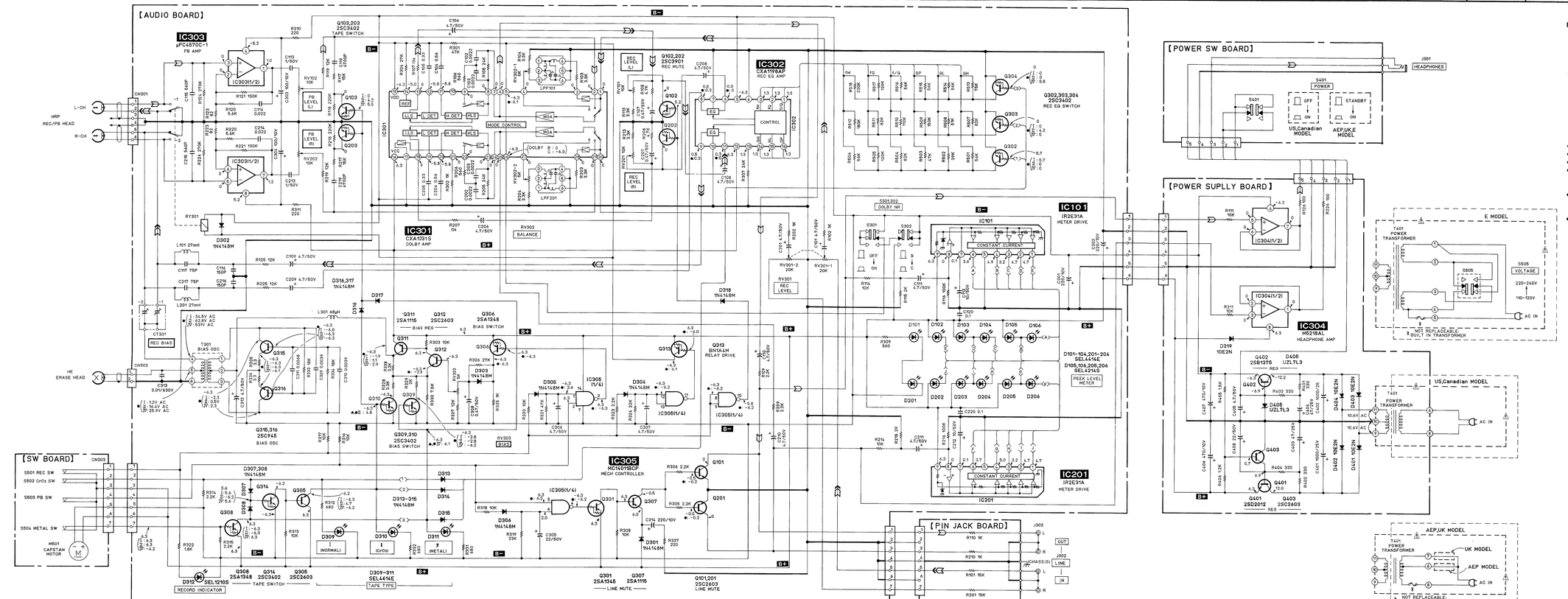
1SS120
UZL-7L3

● Semiconductor Location

Ref. No.	Location
D101	E-7
D102	E-8
D103	E-8
D104	E-9
D105	E-9
D106	E-10
D201	D-7
D202	D-8
D203	D-8
D204	D-9
D205	D-9
D206	D-10
D301	B-12
D302	C-7
D303	C-6
D304	D-7
D305	E-7
D306	E-6
D307	C-7
D308	C-7
D309	C-7
D310	C-7
D311	C-8
D312	D-5
D313	E-10
D314	E-9
D315	E-10
D316	D-8
D317	D-8
D318	E-11
D319	G-5
D401	G-6
D402	G-6
D403	G-6
D404	G-6
D405	G-6
IC101	E-9
IC201	D-10
IC301	C-13
IC302	E-12
IC303	B-8
IC304	H-4
IC305	E-7
Q101	B-11
Q102	E-12
Q103	B-14
Q201	B-10
Q202	E-12
Q203	B-13
Q301	B-10
Q302	E-10
Q303	E-10
Q304	E-10
Q305	D-8
Q306	C-7
Q307	B-10
Q308	C-7
Q309	C-6
Q310	C-5
Q311	C-5
Q312	C-5
Q313	D-7
Q314	D-8
Q315	D-4
Q316	D-4
Q401	G-5
Q402	H-5
Q403	G-5

Note:
- ○——○ : parts extracted from the component side.
- ⊏⊐ : indicates side identified with part number.





Note:

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

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+ : B + Line.
- B− : B − Line.
- ▭ : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
  no mark : PLAY
  ● : REC
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷▷ : PB (DECK A)
  ▷▷ : REC (DECK A)

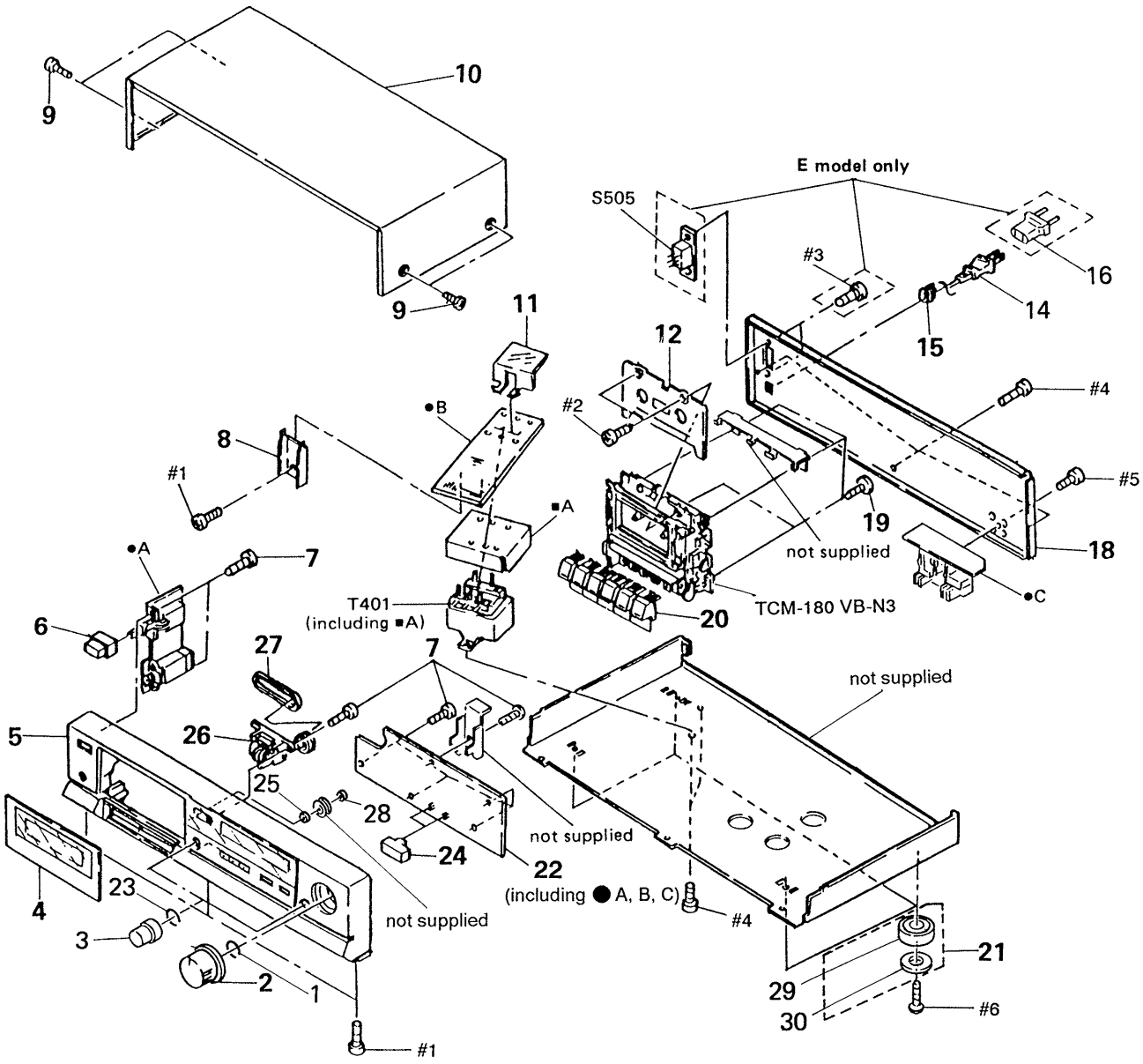
SECTION 5
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- 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 neméro spécifié.

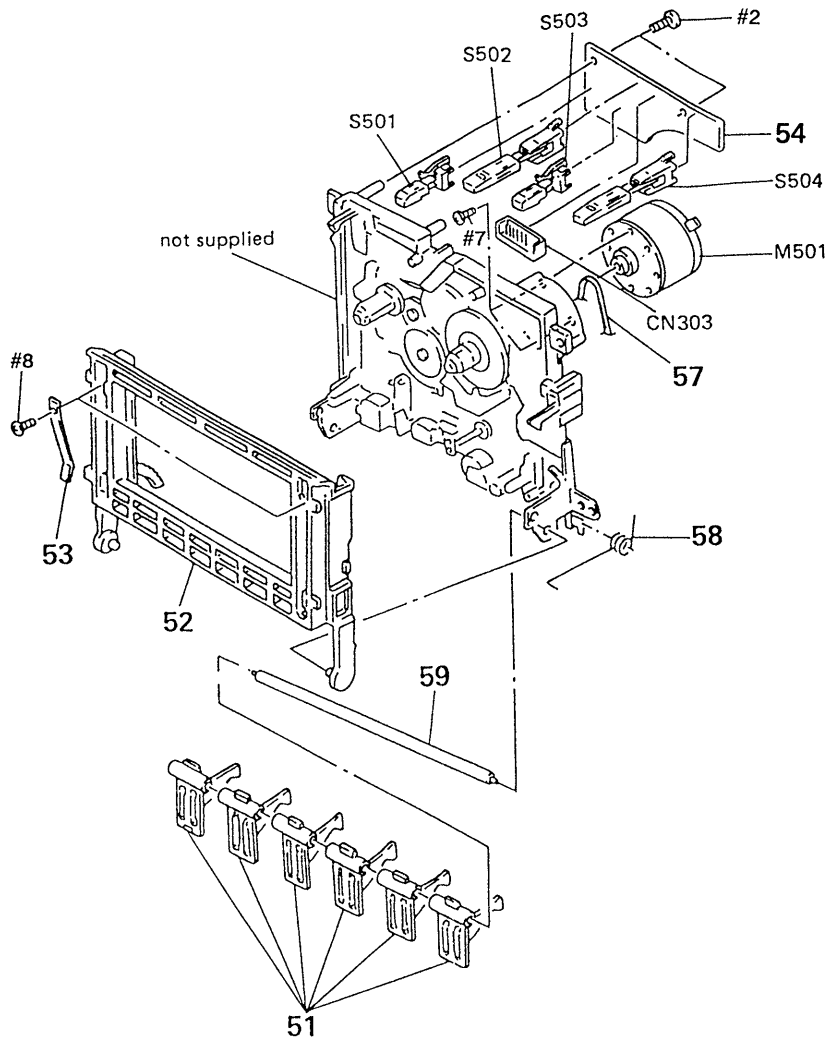
(1) CABINET AND FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	3-350-426-01	SPRING	
2	3-367-438-12	KNOB (REC)	
3	3-367-431-01	KNOB (BAL)	
4	X-3362-657-1	LID ASSY, CASSETTE	
5	A-2003-854-A	PANEL ASSY, FRONT (AEP, UK, E)	
5	X-3362-658-1	PANEL ASSY, FRONT (US, Canadian)	
6	4-917-460-01	KNOB, POWER (MADE IN MALAYSIA)	
6	3-354-912-01	KNOB, POWER (MADE IN JAPAN)	
7	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
8	* 3-309-144-21	HEAT SINK	
9	3-704-366-01	SCREW (CASE) (M3X8)	
10	4-943-088-31	CASE (MADE IN MALAYSIA)	
10	3-332-578-42	CASE (MADE IN JAPAN)	
11	* 3-327-872-01	COVER (TRANSFORMER)	
12	X-3358-214-1	PLATE ASSY, ORNAMENTAL	
14	⚠· 1-551-506-XX	CORD, POWER (US, Canadian) (MADE IN JAPAN)	
14	⚠· 1-551-884-32	CORD, POWER (UK) (MADE IN MALAYSIA)	
14	⚠· 1-551-908-11	CORD, POWER (AEP) (MADE IN MALAYSIA)	
14	⚠· 1-551-188-XX	CORD, POWER (E) (MADE IN MALAYSIA)	
14	⚠· 1-551-628-12	CORD, POWER (US, Canadian) (MADE IN MALAYSIA)	
15	* 3-703-571-11	BUSHING (S) (4516), CORD (US, Canadian, E)	
15	* 3-703-244-02	BUSHING (S) (4516), CORD (AEP, UK)	
16	⚠· 1-569-007-11	ADAPTOR CONNECTION 2P (E)	
18	* 3-367-318-32	PANEL, BACK (UK) (MADE IN MALAYSIA)	
18	* 3-367-318-42	PANEL, BACK (E) (MADE IN MALAYSIA)	
18	* 3-367-318-22	PANEL, BACK (AEP) (MADE IN MALAYSIA)	
18	* 3-367-318-01	PANEL, BACK (US, Canadian) (MADE IN MALAYSIA)	
18	* 3-366-413-01	PANEL, BACK (US) (MADE IN JAPAN)	
19	4-928-635-21	SCREW, +BV (2.6X10) TAPPING	
20	3-366-411-01	BUTTON (BLOCK)	
21	X-4885-950-1	FOOT ASSY (US) (MADE IN JAPAN)	
22	* A-2006-547-A	AUDIO BOARD, COMPLETE (MADE IN MALAYSIA)	
22	* A-2006-427-A	AUDIO BOARD, COMPLETE (MADE IN JAPAN) (INCLUDING A, B, C)	
23	3-356-957-01	SPRING	
24	3-350-810-01	BUTTON	
25	3-701-437-11	WASHER	
26	1-548-596-61	COUNTER, TAPE (MIDDLE TYPE)	
27	3-527-150-XX	BELT, CAPSTAN	
28	3-558-708-11	WASHER, STOPPER	
29	3-318-688-31	FOOT (F58175 S) (AEP, UK, E) (MADE IN MALAYSIA)	
29	3-318-688-51	FOOT (F58175 S) (US, Canadian) (MADE IN MALAYSIA)	
30	4-923-836-11	CUSHION	
S505	⚠· 1-552-535-00	SWITCH, POWER & VOLTAGE CHANGE (E)	
T401	⚠· 1-449-593-11	TRANSFORMER, POWER (US, Canadian)	
T401	⚠· 1-449-388-11	TRANSFORMER, POWER (E)	
T401	⚠· 1-450-442-21	TRANSFORMER, POWER (AEP, UK)	

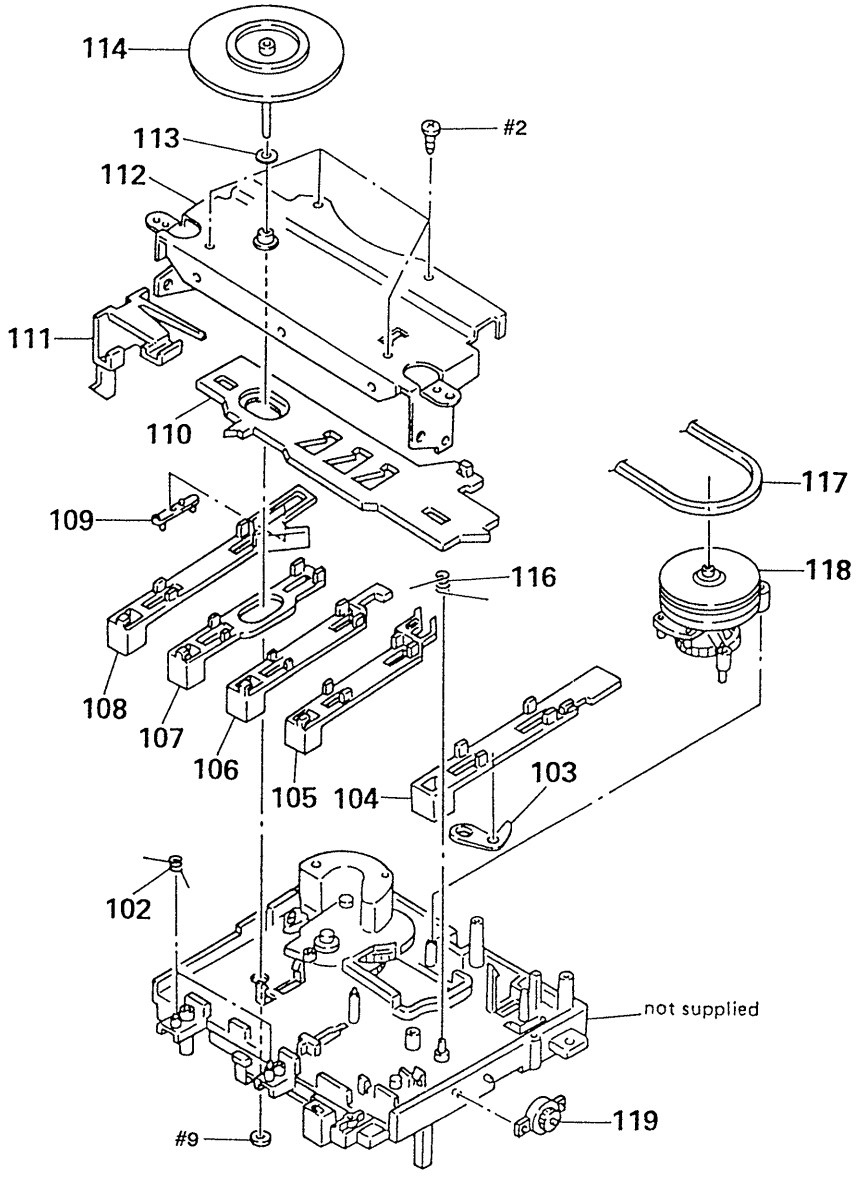
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

(2) MECHANISM SECTION-1
(TCM-180VB-N3)



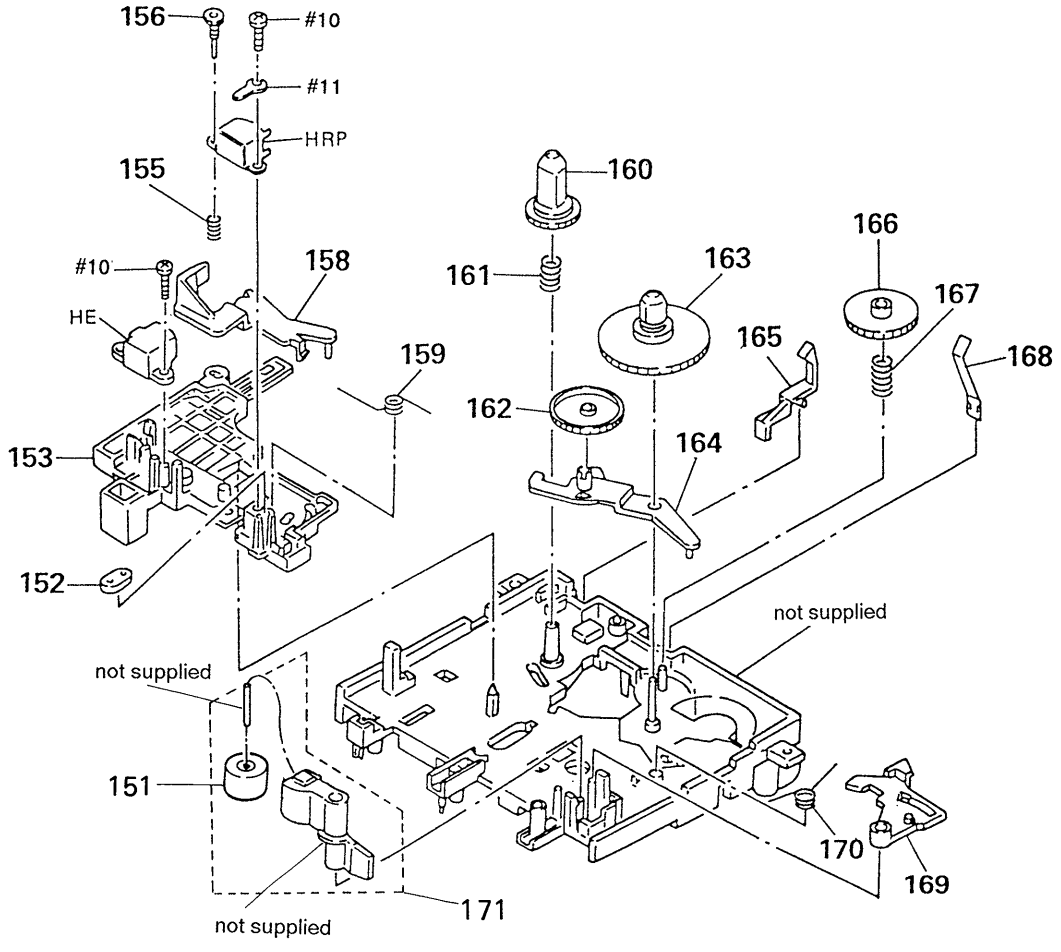
Ref. No.	Part No.	Description	Remark
51	3-358-271-01	LEVER (BUTTON BASE A)	
52	3-358-266-02	HOLDER, CASSETTE	
53	3-358-209-01	SPRING (CASSETTE HOLDER), LEAF	
54	* 1-635-160-11	PC BOARD, SWITCH	
57	3-358-230-01	BELT (A1)	
58	3-358-287-01	SPRING (LOADING A), TORSION	
59	3-358-242-01	SHAFT (BUTTON SHAFT)	
M501	X-3358-211-1	MOTOR (A) ASSY	

(3) MECHANISM SECTION-2
(TCM-180VB-N3)



Ref. No.	Part No.	Description	Remark
102	3-358-232-01	SPRING (S-P F-R), TORSION	
103	* 3-358-204-01	LEVER (REC SAFETY)	
104	3-358-259-01	SLIDER (REC)	
105	3-358-258-01	SLIDER (REW)	
106	3-358-257-01	SLIDER (FF)	
107	3-358-256-01	SLIDER (STOP/EJECT)	
108	3-358-260-01	SLIDER (PAUSE)	
109	* 3-358-226-01	LEVER (PAUSE LEVER)	
110	* 3-358-249-01	SLIDER (LOCK PLATE)	
111	* 3-358-261-02	SLIDER (HOLDER LOCK)	
112	* X-3358-213-1	BRACKET (A) ASSY	
113	3-701-437-01	WASHER	
114	X-3358-205-1	FLYWHEEL ASSY	
116	3-358-233-01	SPRING (REC-LOCK), TORSION	
117	3-358-230-01	BELT (A1)	
118	X-3358-202-1	LEVER (FR ARM) ASSY	
119	3-319-224-31	DAMPER, SMALL	

(4) MECHANISM SECTION-3 (TCM-180VB-N3)



Ref. No.	Part No.	Description	Remark
151	3-578-143-11	PINCH ROLLER	
152	* 3-358-215-01	BUSHING (WIRE KIT RETAINER)	
153	3-358-265-01	SLIDER (HEAD PC BOARD A)	
155	3-358-234-01	SPRING (AZIMUTH), COMPRESSION	
156	3-358-288-01	SCREW (T), AZIMUTH	
158	* 3-358-251-01	LEVER (TENSION DETECTION ARM)	
159	3-358-228-01	SPRING, TORSION	
160	3-358-248-01	GEAR (SUPPLY REEL)	
161	3-358-208-01	SPRING (SUPPLY), COMPRESSION	
162	* 3-358-284-01	GEAR (TU GEAR)	

Ref. No.	Part No.	Description	Remark
163	X-3358-203-1	TABLE (T) ASSY, REEL	
164	* 3-358-252-01	LEVER (TU ARM)	
165	* 3-358-255-01	LEVER (GB LEVER)	
166	* 3-358-224-01	GEAR (FF GEAR)	
167	3-358-207-01	SPRING (FF GEAR), COMPRESSION	
168	3-358-227-01	SPRING, LEAF	
169	* 3-358-253-01	LEVER (SHUT-OFF LEVER)	
170	3-358-243-01	SPRING (TU-SHUT), TORSION	
171	X-3358-204-1	LEVER (PINCH LEVER) ASSY	
HE	1-543-673-11	HEAD, MAGNETIC (ERASE)	
HRP	1-543-319-11	HEAD, MAGNETIC (REC/PB)	

SECTION 6
ELECTRICAL PARTS LIST

AUDIO | **PIN JACK** | **POWER SW** | **POWER SUPPLY**

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 and -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 neméro spécifié.

Ref. No.	Part No.	Description			Remark
	* A-2006-547-A	AUDIO BOARD, COMPLETE (MADE IN MALAYSIA) (INCLUDING PIN JACK BOARD, POWER SW BOARD, POWER SUPPLY BOARD)			
	**********				
	* 3-309-144-21	HEAT SINK			
	7-682-547-04	SCREW +BVTT 3X6 (S)			
		< CAPACITOR >			
C101	1-124-927-11	ELECT	4.7uF	20%	100V
C102	1-130-475-00	MYLAR	0.0022uF	5%	50V
C103	1-130-475-00	MYLAR	0.0022uF	5%	50V
C104	1-136-174-00	FILM	0.56uF	5%	50V
C105	1-136-171-00	FILM	0.33uF	5%	50V
C106	1-124-927-11	ELECT	4.7uF	20%	100V
C107	1-124-902-00	ELECT	0.47uF	20%	50V
C108	1-124-927-11	ELECT	4.7uF	20%	100V
C109	1-124-927-11	ELECT	4.7uF	20%	100V
C110	1-124-927-11	ELECT	4.7uF	20%	100V
C111	1-124-927-11	ELECT	4.7uF	20%	100V
C112	1-124-907-11	ELECT	10uF	20%	50V
C113	1-124-611-00	ELECT	1uF	20%	50V
C114	1-136-157-00	FILM	0.022uF	5%	50V
C115	1-162-291-31	CERAMIC	560PF	10%	50V
C116	1-162-284-31	CERAMIC	150PF	10%	50V
C117	1-136-273-91	FILM	75PF	5%	630V
C119	1-161-377-00	CERAMIC	0.0047uF	30%	16V
C120	1-164-159-11	CERAMIC	0.1uF		50V
C201	1-124-927-11	ELECT	4.7uF	20%	100V
C202	1-130-475-00	MYLAR	0.0022uF	5%	50V
C203	1-130-475-00	MYLAR	0.0022uF	5%	50V
C204	1-136-174-00	FILM	0.56uF	5%	50V
C205	1-136-171-00	FILM	0.33uF	5%	50V
C206	1-124-927-11	ELECT	4.7uF	20%	100V
C207	1-124-902-00	ELECT	0.47uF	20%	50V
C208	1-124-927-11	ELECT	4.7uF	20%	100V
C209	1-124-927-11	ELECT	4.7uF	20%	100V
C210	1-124-927-11	ELECT	4.7uF	20%	100V
C211	1-124-927-11	ELECT	4.7uF	20%	100V
C212	1-124-907-11	ELECT	10uF	20%	50V
C213	1-124-611-00	ELECT	1uF	20%	50V
C214	1-136-157-00	FILM	0.022uF	5%	50V
C215	1-162-291-31	CERAMIC	560PF	10%	50V
C216	1-162-284-31	CERAMIC	150PF	10%	50V
C217	1-136-273-91	FILM	75PF	5%	630V
C219	1-161-377-00	CERAMIC	0.0047uF	30%	16V
C220	1-164-159-11	CERAMIC	0.1uF		50V
C301	1-126-176-11	ELECT	220uF	20%	10V
C302	1-126-176-11	ELECT	220uF	20%	10V
C303	1-124-443-00	ELECT	100uF	20%	10V
C304	1-124-443-00	ELECT	100uF	20%	10V
C305	1-126-233-11	ELECT	22uF	20%	50V
C306	1-124-927-11	ELECT	4.7uF	20%	100V
C307	1-124-927-11	ELECT	4.7uF	20%	100V
C308	1-124-902-00	ELECT	0.47uF	20%	50V
C309	1-130-478-00	MYLAR	0.0039uF	5%	50V
C310	1-130-478-00	MYLAR	0.0039uF	5%	50V
C311	1-130-481-00	MYLAR	0.0068uF	5%	50V
C312	1-124-927-11	ELECT	4.7uF	20%	100V
C313	1-136-601-11	FILM	0.01uF	5%	630V
C314	1-126-176-11	ELECT	220uF	20%	10V
C401	1-124-557-11	ELECT	1000uF	20%	25V
C402	1-124-557-11	ELECT	1000uF	20%	25V
C403	1-124-477-11	ELECT	47uF	20%	25V
C404	1-124-477-11	ELECT	47uF	20%	25V
C405	1-124-927-11	ELECT	4.7uF	20%	100V
C406	1-124-472-11	ELECT	470uF	20%	10V
C407	1-124-472-11	ELECT	470uF	20%	10V
C408	1-126-233-11	ELECT	22uF	20%	50V

AUDIO | PIN JACK | POWER SW | POWER SUPPLY

Ref.No.	Part No.	Description	Remark
		< CONNECTOR >	
CN301	* 1-564-509-11	PLUG, CONNECTOR 6P	
CN302	* 1-564-505-11	PLUG, CONNECTOR 2P	
		< TRIMMER >	
CT301	1-141-225-00	CAP, TUNING, TRIMAR	
		< DIODE >	
D101	8-719-304-37	DIODE SEL4414E-C	
D102	8-719-304-37	DIODE SEL4414E-C	
D103	8-719-304-37	DIODE SEL4414E-C	
D104	8-719-304-37	DIODE SEL4414E-C	
D105	8-719-304-32	DIODE SEL4214S-C	
D106	8-719-304-32	DIODE SEL4214S-C	
D201	8-719-304-37	DIODE SEL4414E-C	
D202	8-719-304-37	DIODE SEL4414E-C	
D203	8-719-304-37	DIODE SEL4414E-C	
D204	8-719-304-37	DIODE SEL4414E-C	
D205	8-719-304-32	DIODE SEL4214S-C	
D206	8-719-304-32	DIODE SEL4214S-C	
D301	8-719-912-20	DIODE 1SS120	
D302	8-719-912-20	DIODE 1SS120	
D303	8-719-912-20	DIODE 1SS120	
D304	8-719-912-20	DIODE 1SS120	
D305	8-719-912-20	DIODE 1SS120	
D306	8-719-912-20	DIODE 1SS120	
D307	8-719-912-20	DIODE 1SS120	
D308	8-719-912-20	DIODE 1SS120	
D309	8-719-304-37	DIODE SEL4414E-C	
D310	8-719-304-37	DIODE SEL4414E-C	
D311	8-719-304-37	DIODE SEL4414E-C	
D312	8-719-302-46	DIODE SEL1210S-C-2	
D313	8-719-912-20	DIODE 1SS120	
D314	8-719-912-20	DIODE 1SS120	
D315	8-719-912-20	DIODE 1SS120	
D316	8-719-912-20	DIODE 1SS120	
D317	8-719-912-20	DIODE 1SS120	
D318	8-719-912-20	DIODE 1SS120	
D319	8-719-200-77	DIODE 10E2N	
D401	8-719-200-77	DIODE 10E2N	
D402	8-719-200-77	DIODE 10E2N	
D403	8-719-200-77	DIODE 10E2N	
D404	8-719-200-77	DIODE 10E2N	
D405	8-719-000-81	DIODE UZL-7L3	

Ref.No.	Part No.	Description	Remark
		< IC >	
IC101	8-759-917-42	IC IR2E31A	
IC201	8-759-917-42	IC IR2E31A	
IC301	8-752-035-94	IC CXA1331S	
IC302	8-752-038-02	IC CXA1198AP	
IC303	8-759-111-44	IC uPC4570C-1	
IC304	8-759-634-50	IC M5218AL	
IC305	8-759-140-11	IC uPD4011BC	
		< JACK >	
J301	1-507-981-11	JACK (LARGE TYPE) (HEADPHONES)	
J302	1-565-259-11	JACK, PIN 4P (LINE IN/OUT)	
		< COIL >	
L101	1-410-780-11	INDUCTOR 27mH	
L201	1-410-780-11	INDUCTOR 27mH	
L301	1-410-976-11	INDUCTOR 68uH	
		< FILTER >	
LPF101	1-236-087-11	FILTER, LOW PASS	
LPF201	1-236-087-11	FILTER, LOW PASS	
		< TRANSISTOR >	
Q101	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q102	8-729-900-74	TRANSISTOR DTC143TS	
Q103	8-729-900-80	TRANSISTOR DTC114ES	
Q201	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q202	8-729-900-74	TRANSISTOR DTC143TS	
Q203	8-729-900-80	TRANSISTOR DTC114ES	
Q301	8-729-900-65	TRANSISTOR DTA144ES	
Q302	8-729-900-80	TRANSISTOR DTC114ES	
Q303	8-729-900-80	TRANSISTOR DTC114ES	
Q304	8-729-900-80	TRANSISTOR DTC114ES	
Q305	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q306	8-729-900-61	TRANSISTOR DTA114ES	
Q307	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q308	8-729-900-61	TRANSISTOR DTA114ES	
Q309	8-729-900-80	TRANSISTOR DTC114ES	
Q310	8-729-900-80	TRANSISTOR DTC114ES	
Q311	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q312	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q313	8-729-900-61	TRANSISTOR DTA114ES	
Q314	8-729-900-80	TRANSISTOR DTC114ES	
Q315	8-729-194-57	TRANSISTOR 2SC945-P	
Q316	8-729-194-57	TRANSISTOR 2SC945-P	
Q401	8-729-209-15	TRANSISTOR 2SD2012	
Q402	8-729-111-67	TRANSISTOR 2SB1094-L	
Q403	8-729-620-05	TRANSISTOR 2SC2603-EF	

AUDIO | PIN JACK | POWER SW | POWER SUPPLY

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R101	1-249-431-11	CARBON	15K	5% 1/4W	
R102	1-249-417-11	CARBON	1K	5% 1/4W	
R103	1-249-423-11	CARBON	3.3K	5% 1/4W	
R104	1-249-423-11	CARBON	3.3K	5% 1/4W	
R105	1-247-864-11	CARBON	24K	5% 1/4W	
R106	1-249-414-11	CARBON	560	5% 1/4W	
R107	1-249-431-11	CARBON	15K	5% 1/4W	
R108	1-249-425-11	CARBON	4.7K	5% 1/4W	
R109	1-249-421-11	CARBON	2.2K	5% 1/4W	
R110	1-249-417-11	CARBON	1K	5% 1/4W	
R111	1-249-429-11	CARBON	10K	5% 1/4W	
R113	1-249-423-11	CARBON	3.3K	5% 1/4W	
R114	1-249-429-11	CARBON	10K	5% 1/4W	
R115	1-247-838-00	CARBON	2K	5% 1/4W	
R116	1-249-441-11	CARBON	100K	5% 1/4W	
R117	1-249-431-11	CARBON	15K	5% 1/4W	
R118	1-247-887-00	CARBON	220K	5% 1/4W	
R119	1-249-430-11	CARBON	12K	5% 1/4W	
R120	1-249-426-11	CARBON	5.6K	5% 1/4W	
R121	1-247-882-11	CARBON	130K	5% 1/4W	
R123	1-249-404-00	CARBON	82	5% 1/4W	
R124	1-247-889-00	CARBON	270K	5% 1/4W	
R125	1-249-430-11	CARBON	12K	5% 1/4W	
R126	1-249-405-11	CARBON	100	5% 1/4W	
R201	1-249-431-11	CARBON	15K	5% 1/4W	
R202	1-249-417-11	CARBON	1K	5% 1/4W	
R203	1-249-423-11	CARBON	3.3K	5% 1/4W	
R204	1-249-423-11	CARBON	3.3K	5% 1/4W	
R205	1-247-864-11	CARBON	24K	5% 1/4W	
R206	1-249-414-11	CARBON	560	5% 1/4W	
R207	1-249-431-11	CARBON	15K	5% 1/4W	
R208	1-249-425-11	CARBON	4.7K	5% 1/4W	
R209	1-249-421-11	CARBON	2.2K	5% 1/4W	
R210	1-249-417-11	CARBON	1K	5% 1/4W	
R211	1-249-429-11	CARBON	10K	5% 1/4W	
R213	1-249-423-11	CARBON	3.3K	5% 1/4W	
R214	1-249-429-11	CARBON	10K	5% 1/4W	
R215	1-247-838-00	CARBON	2K	5% 1/4W	
R216	1-249-441-11	CARBON	100K	5% 1/4W	
R217	1-249-431-11	CARBON	15K	5% 1/4W	
R218	1-247-887-00	CARBON	220K	5% 1/4W	
R219	1-249-430-11	CARBON	12K	5% 1/4W	
R220	1-249-426-11	CARBON	5.6K	5% 1/4W	
R221	1-247-882-11	CARBON	130K	5% 1/4W	
R223	1-249-404-00	CARBON	82	5% 1/4W	
R224	1-247-889-00	CARBON	270K	5% 1/4W	
R225	1-249-430-11	CARBON	12K	5% 1/4W	
R226	1-249-405-11	CARBON	100	5% 1/4W	
R301	1-249-437-11	CARBON	47K	5% 1/4W	
R302	1-249-417-11	CARBON	1K	5% 1/4W	
R303	1-249-429-11	CARBON	10K	5% 1/4W	
R304	1-215-455-00	METAL	27K	1% 1/6W	
R305	1-249-421-11	CARBON	2.2K	5% 1/4W	
R306	1-249-421-11	CARBON	2.2K	5% 1/4W	
R307	1-247-864-11	CARBON	24K	5% 1/4W	
R308	1-249-429-11	CARBON	10K	5% 1/4W	
R309	1-249-414-11	CARBON	560	5% 1/4W	
R310	1-249-409-11	CARBON	220	5% 1/4W	
R311	1-249-409-11	CARBON	220	5% 1/4W	
R312	1-249-415-11	CARBON	680	5% 1/4W	
R313	1-249-429-11	CARBON	10K	5% 1/4W	
R314	1-249-421-11	CARBON	2.2K	5% 1/4W	
R315	1-249-421-11	CARBON	2.2K	5% 1/4W	
R316	1-249-429-11	CARBON	10K	5% 1/4W	
R317	1-249-429-11	CARBON	10K	5% 1/4W	
R318	1-249-429-11	CARBON	10K	5% 1/4W	
R319	1-249-433-11	CARBON	22K	5% 1/4W	
R320	1-249-429-11	CARBON	10K	5% 1/4W	
R321	1-249-437-11	CARBON	47K	5% 1/4W	
R322	1-249-420-11	CARBON	1.8K	5% 1/4W	
R323	1-249-421-11	CARBON	2.2K	5% 1/4W	
R324	1-249-433-11	CARBON	22K	5% 1/4W	
R325	1-249-417-11	CARBON	1K	5% 1/4W	
R326	1-249-434-11	CARBON	27K	5% 1/4W	
R327	1-249-430-11	CARBON	12K	5% 1/4W	
R328	1-249-423-11	CARBON	3.3K	5% 1/4W	
R329	1-247-838-00	CARBON	2K	5% 1/4W	
R330	1-247-852-11	CARBON	7.5K	5% 1/4W	
R331	1-249-415-11	CARBON	680	5% 1/4W	
R332	1-249-415-11	CARBON	680	5% 1/4W	
R333	1-249-432-11	CARBON	18K	5% 1/4W	
R334	1-249-432-11	CARBON	18K	5% 1/4W	
R335	1-249-387-11	CARBON	3.3	5% 1/4W	
R336	1-249-387-11	CARBON	3.3	5% 1/4W	
R337	1-249-409-11	CARBON	220	5% 1/4W	
R338	1-249-423-11	CARBON	3.3K	5% 1/4W	
R401	1-249-411-11	CARBON	330	5% 1/4W	
R402	1-249-411-11	CARBON	330	5% 1/4W	
R403	1-249-411-11	CARBON	330	5% 1/4W	
R404	1-249-411-11	CARBON	330	5% 1/4W	
R405	1-249-419-11	CARBON	1.5K	5% 1/4W	
R406	1-249-418-11	CARBON	1.2K	5% 1/4W	
R501	1-249-438-11	CARBON	56K	5% 1/4W	
R502	1-249-436-11	CARBON	39K	5% 1/4W	

AUDIO | PIN JACK | POWER SW | POWER SUPPLY | SWITCH

Ref. No.	Part No.	Description			Remark
R503	1-249-437-11	CARBON	47K	5% 1/4W	
R504	1-249-440-11	CARBON	82K	5% 1/4W	
R505	1-247-881-00	CARBON	120K	5% 1/4W	
R506	1-249-438-11	CARBON	56K	5% 1/4W	
R507	1-249-440-11	CARBON	82K	5% 1/4W	
R508	1-247-872-11	CARBON	51K	5% 1/4W	
R509	1-247-883-00	CARBON	150K	5% 1/4W	
R510	1-247-880-11	CARBON	110K	5% 1/4W	
R511	1-249-440-11	CARBON	82K	5% 1/4W	
R512	1-247-885-00	CARBON	180K	5% 1/4W	
R513	1-247-876-11	CARBON	75K	5% 1/4W	
R514	1-249-438-11	CARBON	56K	5% 1/4W	
R515	1-249-438-11	CARBON	56K	5% 1/4W	
R516	1-249-438-11	CARBON	56K	5% 1/4W	
R517	1-247-881-00	CARBON	120K	5% 1/4W	
R518	1-247-887-00	CARBON	220K	5% 1/4W	
		< VARIABLE RESISTOR >			
RV101	1-228-994-00	RES, ADJ, METAL10K (REC LEVEL)			
RV102	1-228-994-00	RES, ADJ, METAL10K (PB LEVEL)			
RV201	1-228-994-00	RES, ADJ, METAL10K (REC LEVEL)			
RV202	1-228-994-00	RES, ADJ, METAL10K (PB LEVEL)			
RV301	1-241-495-11	RES, VAR, CARBON 20K/20K (REC LEVEL)			
RV302	1-241-494-11	RES, VAR, CARBON 5K/5K (BALANCE)			
RV303	1-241-498-11	RES, VAR, CARBON 5K (BIAS)			
		< RELAY >			
RY301	1-515-726-11	RELAY			
		< SWITCH >			
S301	1-571-292-11	SWITCH, PUSH (1 KEY) (DOLBY NR)			
S302	1-571-292-11	SWITCH, PUSH (1 KEY) (DOLBY NR)			
S401	1-570-393-21	SWITCH, PUSH (1 KEY) (POWER)			
		< TRANSFORMER >			
T301	1-433-365-11	TRANSFORMER, BIAS OSCILLATION			
**********					
*	1-635-160-11	SWITCH, BOARD			
		**********			
		< CONNECTOR >			
CN303	1-564-500-11	PIN, CONNECTOR 7P			

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S501	1-571-736-11	SWITCH, LEAF	
S502	1-572-335-11	SWITCH, LEAF	
S503	1-571-736-1i	SWITCH, LEAF	
S504	1-572-335-11	SWITCH, LEAF	
**********			
		MISCELLANEOUS	
		**********	
14 ⚠	1-551-188-XX	CORD, POWER (E) (MADE IN MALAYSIA)	
14 ⚠	1-551-506-XX	CORD, POWER (US, Canadian) (MADE IN JAPAN)	
14 ⚠	1-551-628-12	CORD, POWER (US, Canadian) (MADE IN MALAYSIA)	
14 ⚠	1-551-884-32	CORD, POWER (UK) (MADE IN MALAYSIA)	
14 ⚠	1-551-908-11	CORD, POWER (AEP) (MADE IN MALAYSIA)	
16 ⚠	1-569-007-11	ADAPTOR CONNECTION 2P (E)	
26	1-548-596-61	COUNTER, TAPE (MIDDLE TYPE)	
HE	1-543-673-11	HEAD, MAGNETIC (ERASE)	
HRP	1-543-319-11	HEAD, MAGNETIC (REC/PB)	
M501	X-3358-211-1	MOTOR (A) ASSY	
S505 ⚠	1-552-535-00	SWITCH, POWER & VOLTAGE CHANGE (E)	
T401 ⚠	1-449-388-11	TRANSFORMER, POWER (E)	
T401 ⚠	1-449-593-11	TRANSFORMER, POWER (US, Canadian)	
T401 ⚠	1-450-442-21	TRANSFORMER, POWER (AEP, UK)	
**********			
		ACCESSORY & PACKING MATERIAL	
		**********	
	1-559-533-11	CORD, CONNECTION	
*	3-349-037-01	CUSHION (MADE IN JAPAN)	
*	3-364-606-01	CUSHION (MADE IN MALAYSIA)	
*	3-354-979-21	INDIVIDUAL CARTON (MADE IN JAPAN)	
*	3-364-604-11	INDIVIDUAL CARTON (MADE IN MALAYSIA)	
	3-703-450-01	INSTRUCTION (US)	
	3-752-875-11	MANUAL, INSTRUCTION (ENGLISH, F, D, RC) (AEP, Canadian, E) (MADE IN MALAYSIA)	
	3-752-875-21	MANUAL, INSTRUCTION (ENGLISH) (US, UK) (MADE IN JAPAN)	
	3-752-875-41	MANUAL, INSTRUCTION (D, NL, S, I) (AEP) (MADE IN MALAYSIA)	
	3-752-875-61	MANUAL, INSTRUCTION (ENGLISH) (US, UK) (MADE IN MALAYSIA)	
**********			

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 neméro spécifié.

Ref. No.	Part No.	Description	Remark

HARDWARE LIST

# 1	7-682-547-04	SCREW +BVTT 3X6 (S)	
# 2	7-685-133-19	SCREW +P 2.6X6 TYPE2	
# 3	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S (E)	
# 4	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
# 5	7-621-849-00	SCREW (BV/RING)	
# 6	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
# 7	7-621-775-20	SCREW +B 2.6X5	
# 8	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
# 9	7-623-921-01	RING, RETAINING, CAPSTAN	
#11	7-623-505-01	LUG, 2	

9-956-365-11

Sony Corporation
Audio Group

English
91C0593-1
Printed in Japan

Published by Customer Relations and Service Group