BM-18

SERVICE MANUAL

US Model
AEP Model
Canadian Model
UK Model
E Model

Model Name Using Similar Mechanism	BM-17
Tape Transport Mechanism Type	MB-18-06

SPECIFICATIONS

Track system: 4-track 2 channel monaural
Tape: Normal position type
Tape speeds: 4.8 cm/sec. ($1\,^{7}/_{8}$ ips), 2.4 cm/sec. ($^{15}/_{16}$ ips)
Speaker: Approx. 4.5 cm ($1\,^{3}/_{4}$ inches) dia.
Frequency response: 200 – 8,000 Hz at 4.8 cm/s
Input: Microphone input jack [PLUG IN POWER] (minijack)
Sensitivity 0.3 mV for 3 kilohm or lower impedance
Output: Earphone jack (minijack) for 8-ohm earphone or load impedance 10 kilohms or higher
Power output: 300 mW (at 10% harmonic distortion)
Power requirements: 3 V DC, two size AA (R6) batteries
DC IN 3V jack accepts;
Optional Sony AC-D2M AC power adaptor
available in US and Canadian model for use on 120 V AC, 60 Hz
available in UK model for use on 240 V AC, 50 Hz
available in AEP model for use on 220 V AC, 50 Hz
available in E model for use on 120 V AC, 60 Hz or 220 V AC, 50 Hz
DCC-127A car battery cord (optional) and PC-200 DC plug adaptor (optional) for use with 12 V car battery
Battery life: (approx. hrs.)

Battery	Dictating
Sony battery SUM-3 (NS)	3
Sony alkaline battery AM 3 (N)	8

Dimensions: Approx. 33 × 131 × 88.5 mm (w/h/d)
($1\,^{3}/_{8} \times 5\,^{1}/_{4} \times 3\,^{1}/_{2}$ inches)
incl. projecting parts and controls
Weight: Approx. 300 g (10.6 oz)
incl. batteries
Supplied accessory: Carrying case (1)

Design and specifications subject to change without notice.

Optional Accessories

AC power adaptor AC-D2M
Car battery cord DCC-127A
DC plug adaptor PC-200
Electret condenser microphone ECM-155
ECM-144
Cassette eraser BE-9H
Telephone pickup TL-2
Cassette tape DC-30, DC-60, DC-90

Note
This appliance conforms with EEC Directives 76/889 and 82/499 regarding interference suppression.

FEATURES

- Electronic indexing function assits in locating specific parts of a dictation.
- VOR (voice operated recording) system economizes on tapes, batteries and your time.
- Built-in electret condenser microphone.
- Electret condenser microphone with plug-in power system can be connected.
- Two tape speeds can be selected for recording with the SPEED selector: 4.8 cm/sec or 2.4 cm/sec. Match the playback speed to the recording speed.
- One-touch review function facilitates listening to the material just recorded.
- Instant edit
- Fast playback function
- 3-way power: battery, AC power adaptor and car battery cord.

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

PORTABLE DICTATOR
SONY®

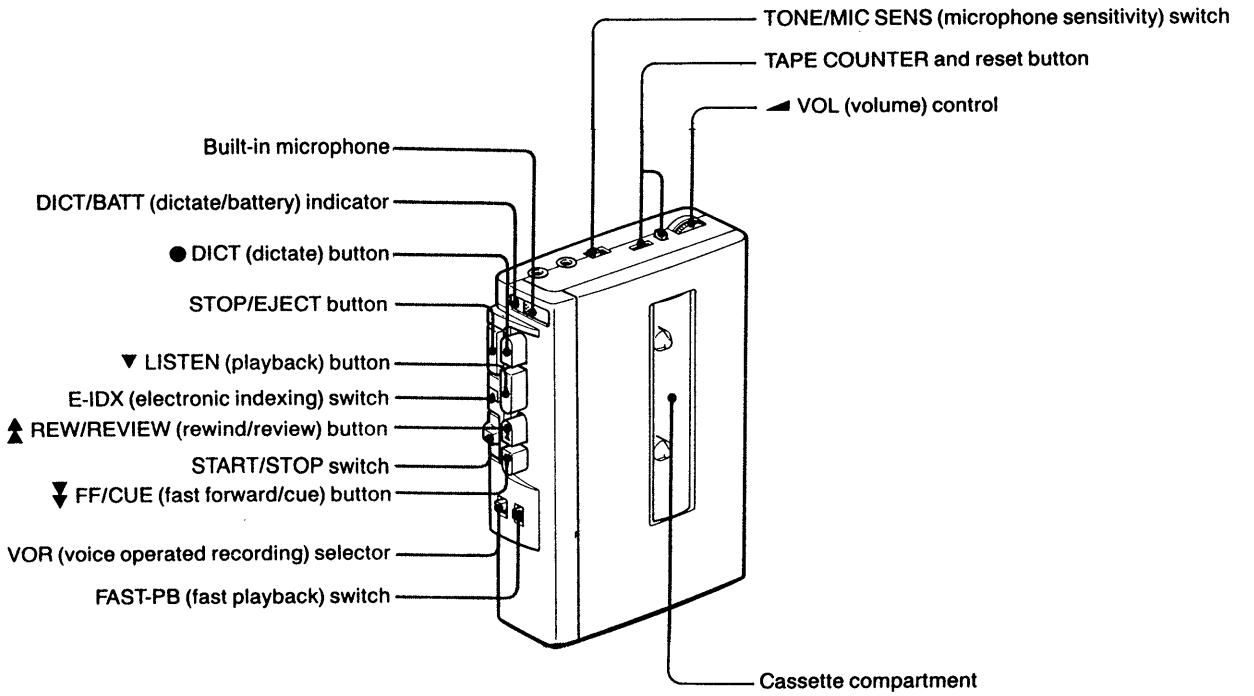
Notes on chip component replacement

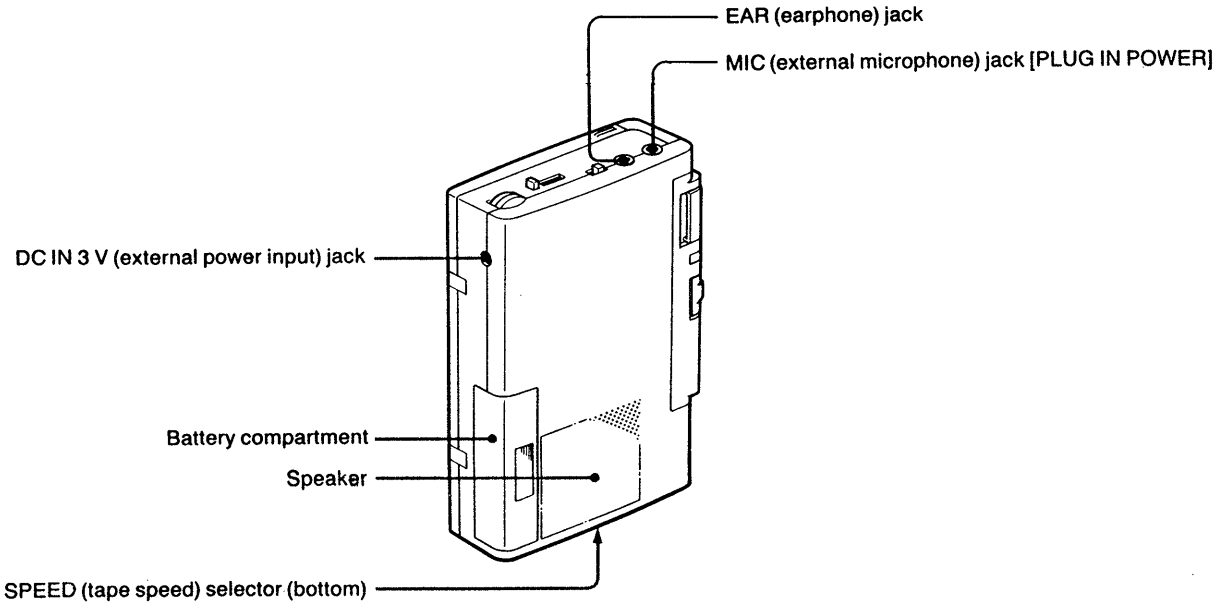
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

- **Repairing printed resistor**

Cut both sides of the resistor and solder the carbon resistor having same value in place of printed one of the conductor side.
1/4W carbon resistor is supplied for the replacing part of the printed resistor.

SECTION 1
GENERAL

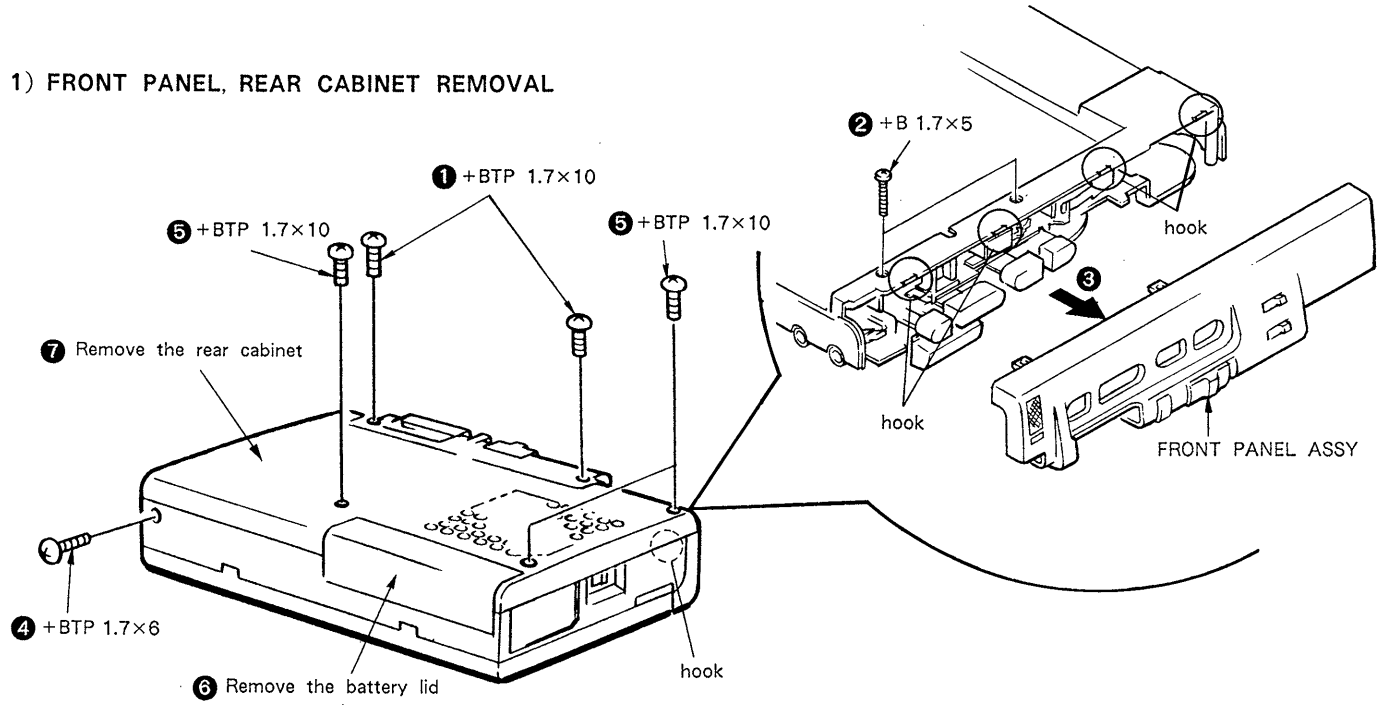




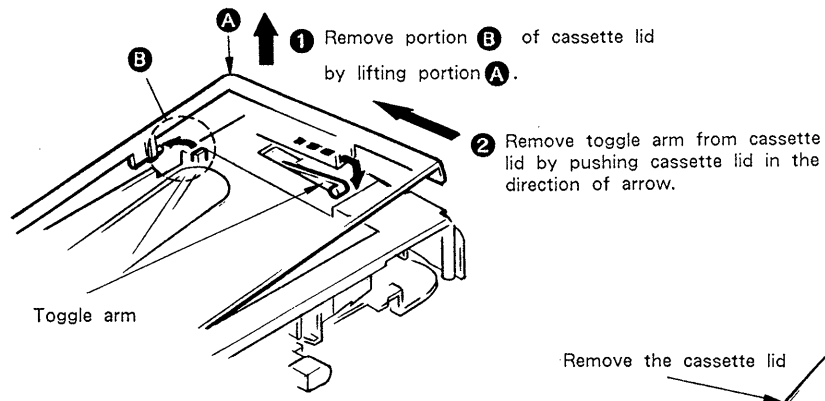
SECTION 2
DISASSEMBLY

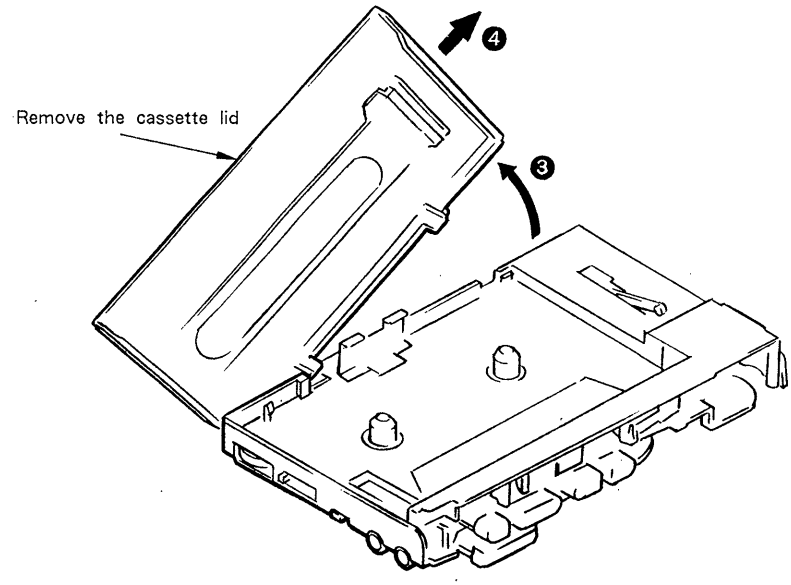
Note : Follow the disassembly procedure in the numerical order given.

1) FRONT PANEL, REAR CABINET REMOVAL

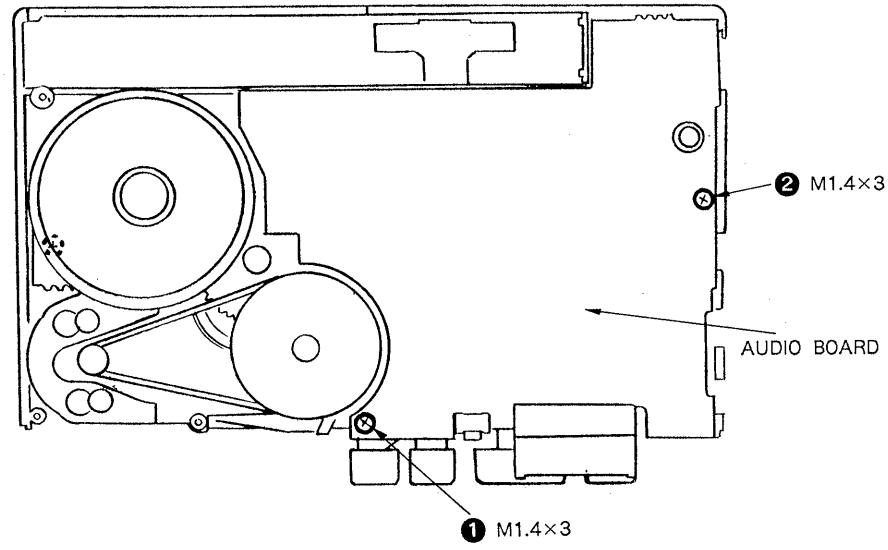


2) CASSETTE LID REMOVAL

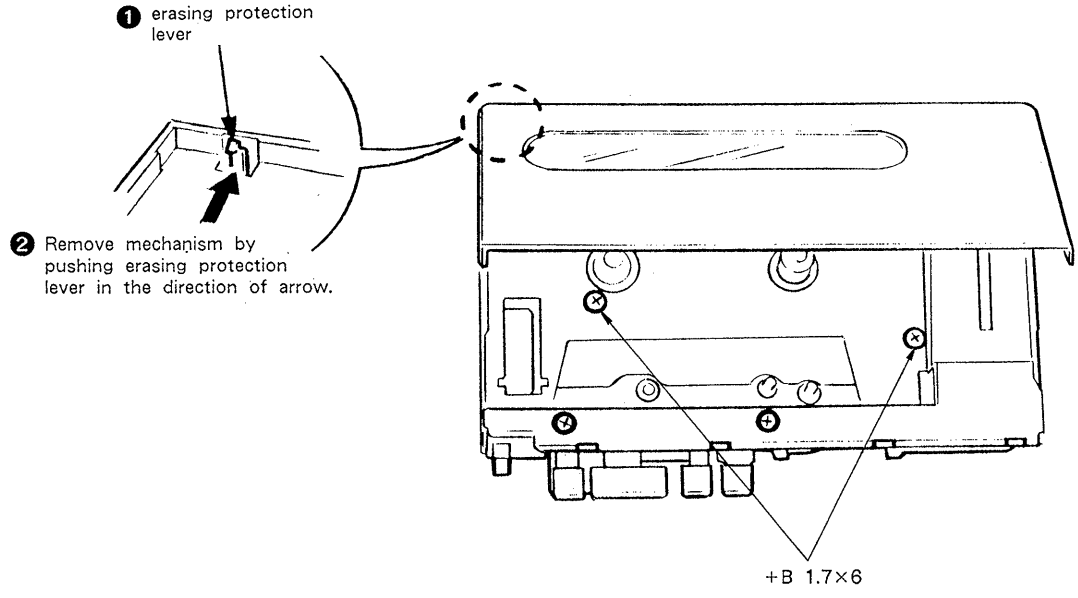




3) AUDIO BOARD REMOVAL



4) MECHANISM REMOVAL



SECTION 3
ADJUSTMENTS

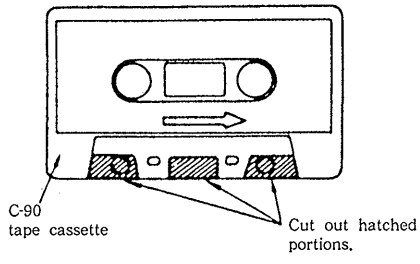
3-1. MECHANICAL ADJUSTMENTS AND MEASUREMENT

PRECAUTION

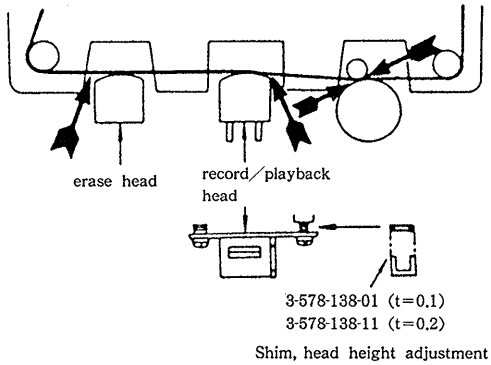
1. Clean the following parts with a denatured-alcohol-moistened swab :
   record/playback head — pinch roller
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use 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 voltage unless otherwise noted.

Head Height Adjustment

1. Use CQ-009C (Part No. 8-909-708-01) or prepare an adjustment cassette as shown below.



2. In record mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions of arrow.



Shim, head height adjustment

power supply voltage : 2.5Vdc
FAST-PB switch : OFF
TAPE SPEED switch : 4.8

Torque Measurement

Torque	Meter Reading	Torque Meter
Forward	22–45g · cm (0.30–0.62 oz · inch)	CQ-102C
Fast Forward and Rewind	65–100g · cm (0.9–1.39 oz · inch)	CQ-201B
Back Tension	1.5–3.5g · cm (0.02–0.05 oz · inch)	CQ-102C

Tape Tension Measurement

Meter	Meter Reading
CQ-403A	More than 110g (3.88 oz)

3-2. ELECTRICAL ADJUSTMENTS

Test tape

Type	Signal	Used for
P-4-A063	6.3kHz, −10dB	Azimuth Adjustment
WS-48A	3kHz, 0dB	Tape Speed Adjustment
CS-122	no signal (for standard)	Record Bias Adjustment

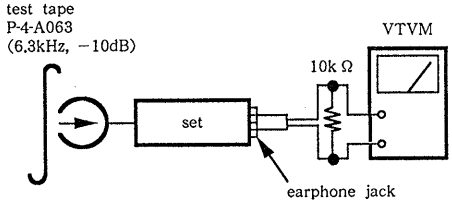
Record/playback Head Azimuth Adjustment

Setting :

FAST-PB Switch : OFF
TAPE SPEED Switch : 4.8

Procedure :

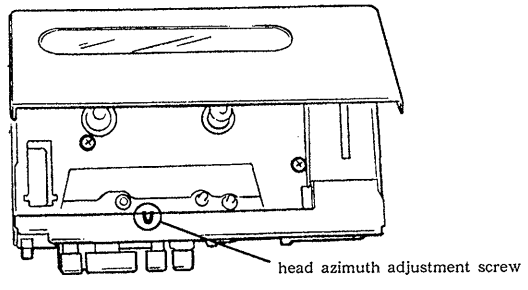
1. Mode : playback



2. Turn the adjustment screw to obtain the maximum reading on VTVM.
   Note : Several peaks may appear, but take the maximum.

3. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location :



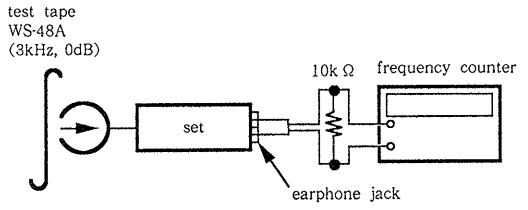
Tape Speed Adjustment

Setting :

FAST-PB Switch : OFF

Procedure :

Mode : playback

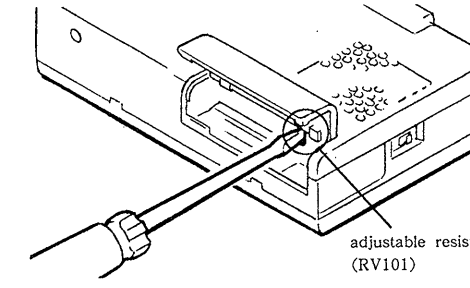


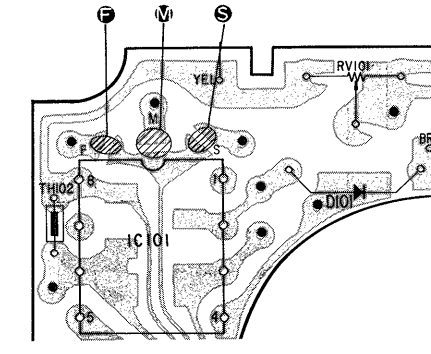
• Perform 4.8cm/S speed adjustment befor 2.4cm/S speed adjustment.

Step	TAPE SPEED switch position (cm/S)	Adjustment point	Frequency counter
1	4.8	RV101	2,940−3,060Hz
2	2.4	Pattern connection Ⓕ, Ⓜ or Ⓢ	1,455−1,545Hz

Frequency difference between the beginning and the end of the tape should be within 1%.

Adjustment Location :





Pattern connection	Frequency reading
Ⓕ	up
Ⓜ	↕
Ⓢ	down

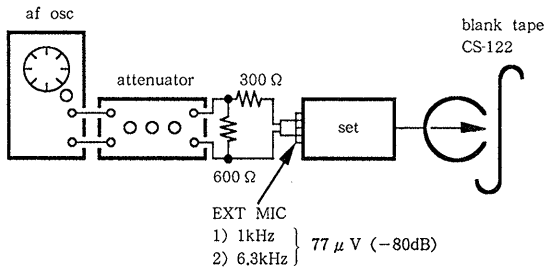
Record Bias Adjustment

Setting :

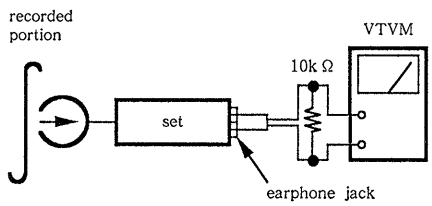
TAPE SPEED Switch : 4.8

Procedure :

1. Mode : record

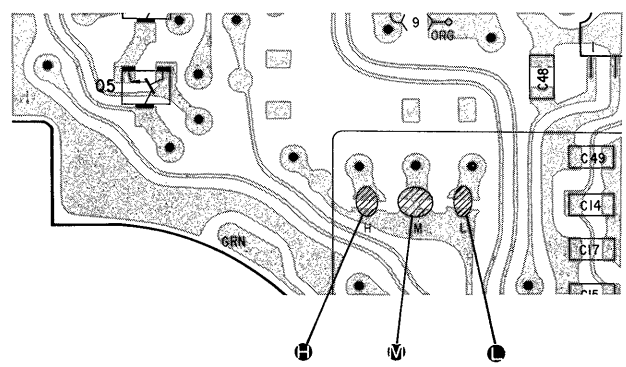


2. Mode : playback



Playback the tape recorded in step 1.
Adjust the VOLUME control so that VTVM reading is 0.0775V (−20dB) when 1kHz is playedback. Next playback 6.3kHz and check that the level difference at this time is within $^{+0}_{-3}$ dB.
If not, connect or disconnect patterns Ⓗ, Ⓜ or Ⓛ and repeat step 1 and 2.

Adjustment Location : Audio Board



Pattern connection	6.3kHz VTVM reading
Ⓗ	down
Ⓜ	↕
Ⓛ	up

SEE ADDITIONAL INFORMATION

SECTION 4
DIAGRAMS

• Semiconductor Lead Layouts

CX20107

SLP159B

LA5524M
NJM2903M

1SS119

2SA1563
2SC2712
2SC4047
2SD1048-X7

• SEMICONDUCTOR LOCATION

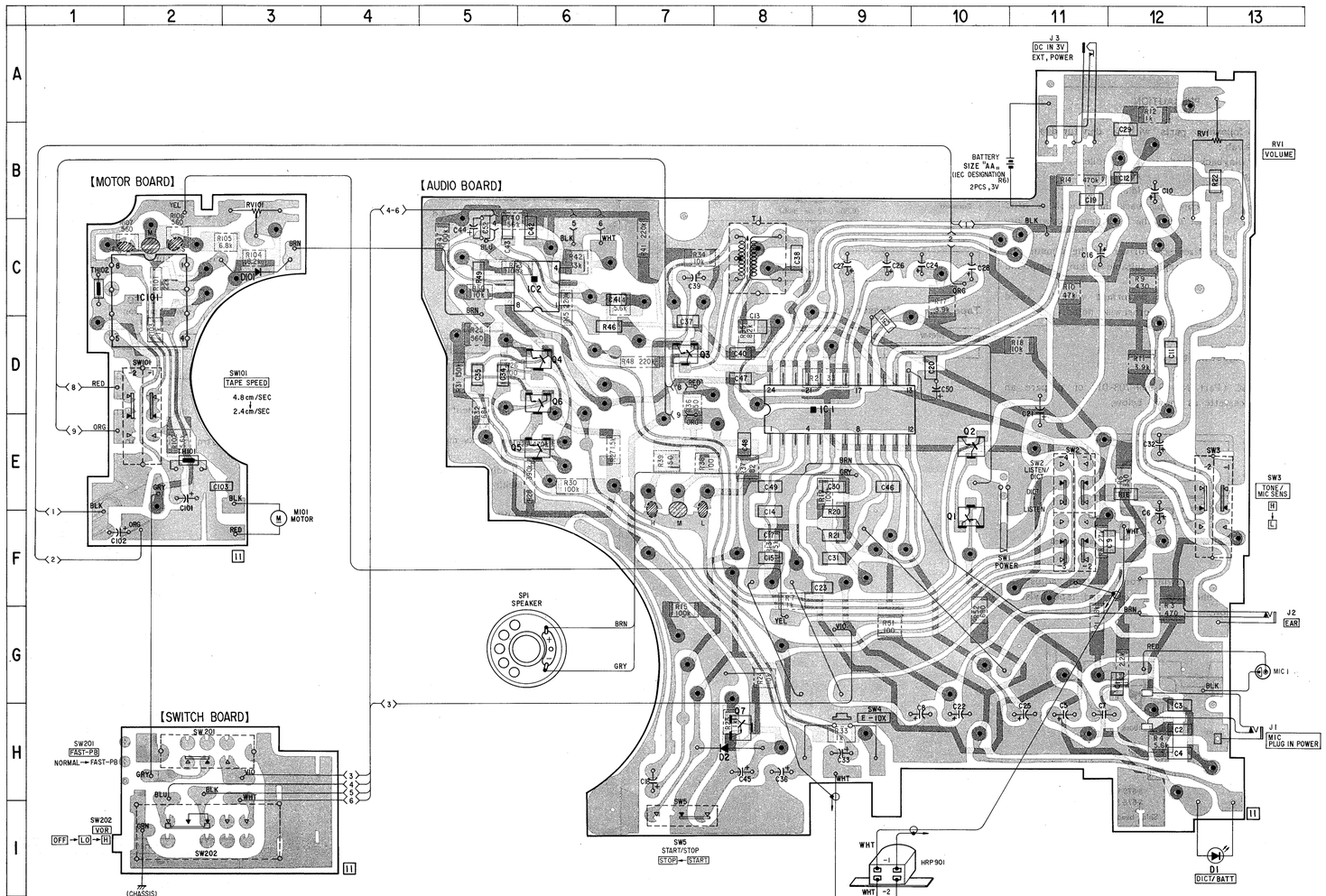
Ref. No.	Location
IC1	D-9
IC2	C-6
IC101	C-2
Q1	F-10
Q2	E-10
Q3	D-7
Q4	D-6
Q5	E-6
Q6	D-6
Q7	H-8
D1	I-13
D2	H-8
D101	C-3

Note on Schematic Diagram :

- 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 ⅛W or less unless otherwise specified.
- ▭ : printed resistor.
- B+ : B+ Line
- ▭ : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is dc 2.5V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : LISTEN
  〈 〉: DICT
- Voltages are taken with a VOM (Input impedance 50k Ω/V). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : LISTEN
  ▷▷ : DICT

Note on Printed Wiring Boards :

- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.



• See Page 8 for note.

SEE ADDITIONAL INFORMATION

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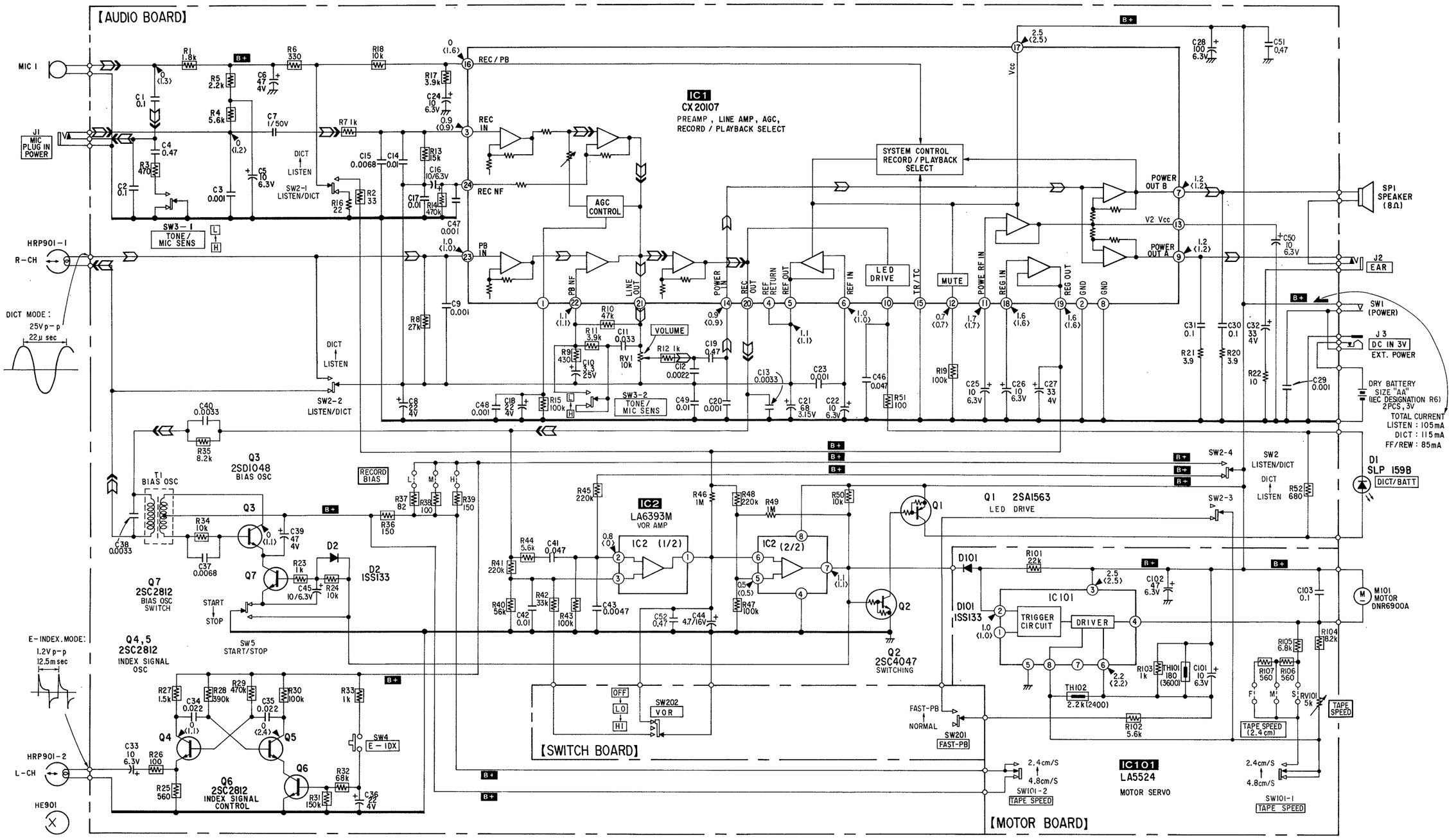
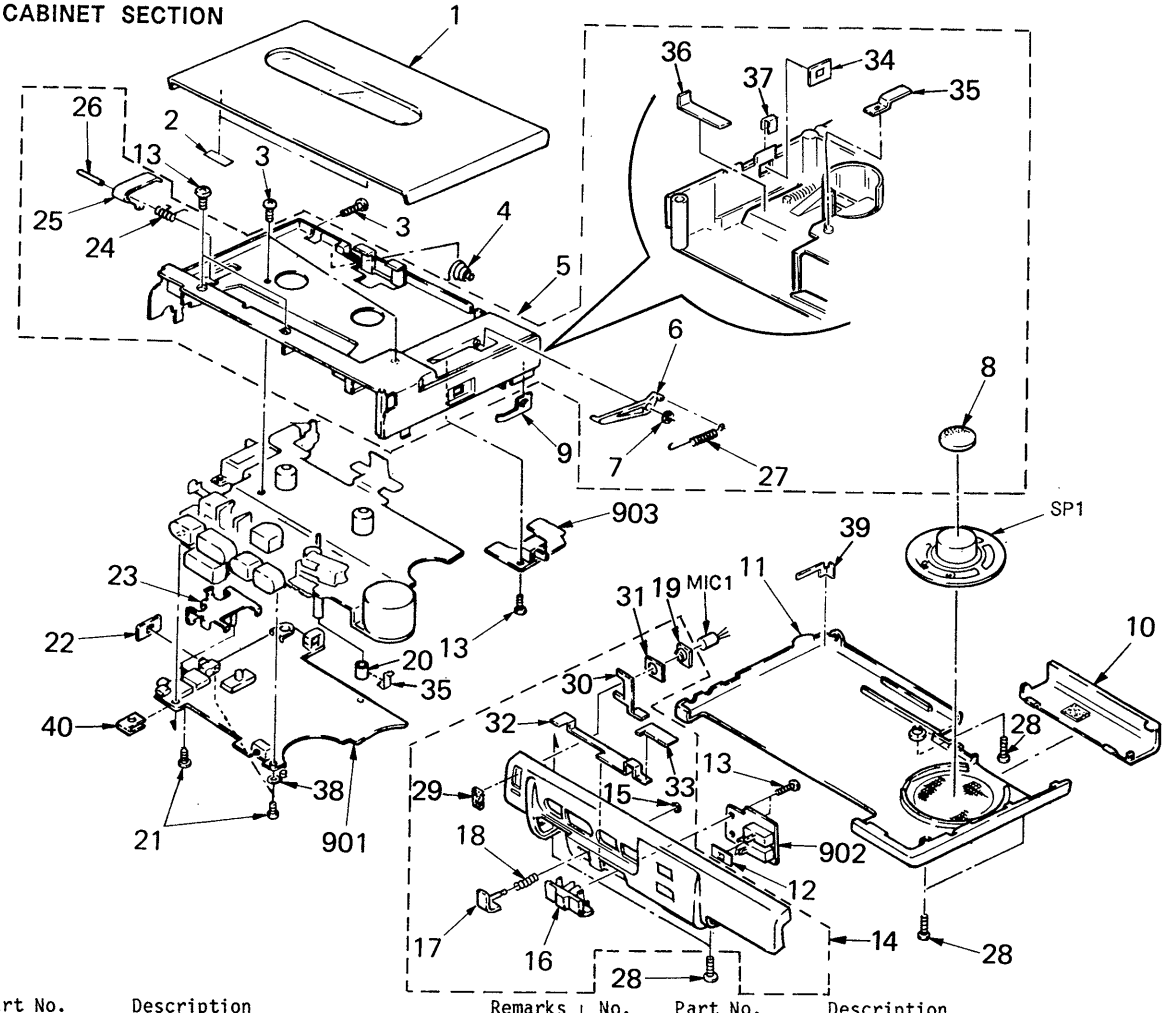


SECTION 5
EXPLODED VIEWS

NOTE:

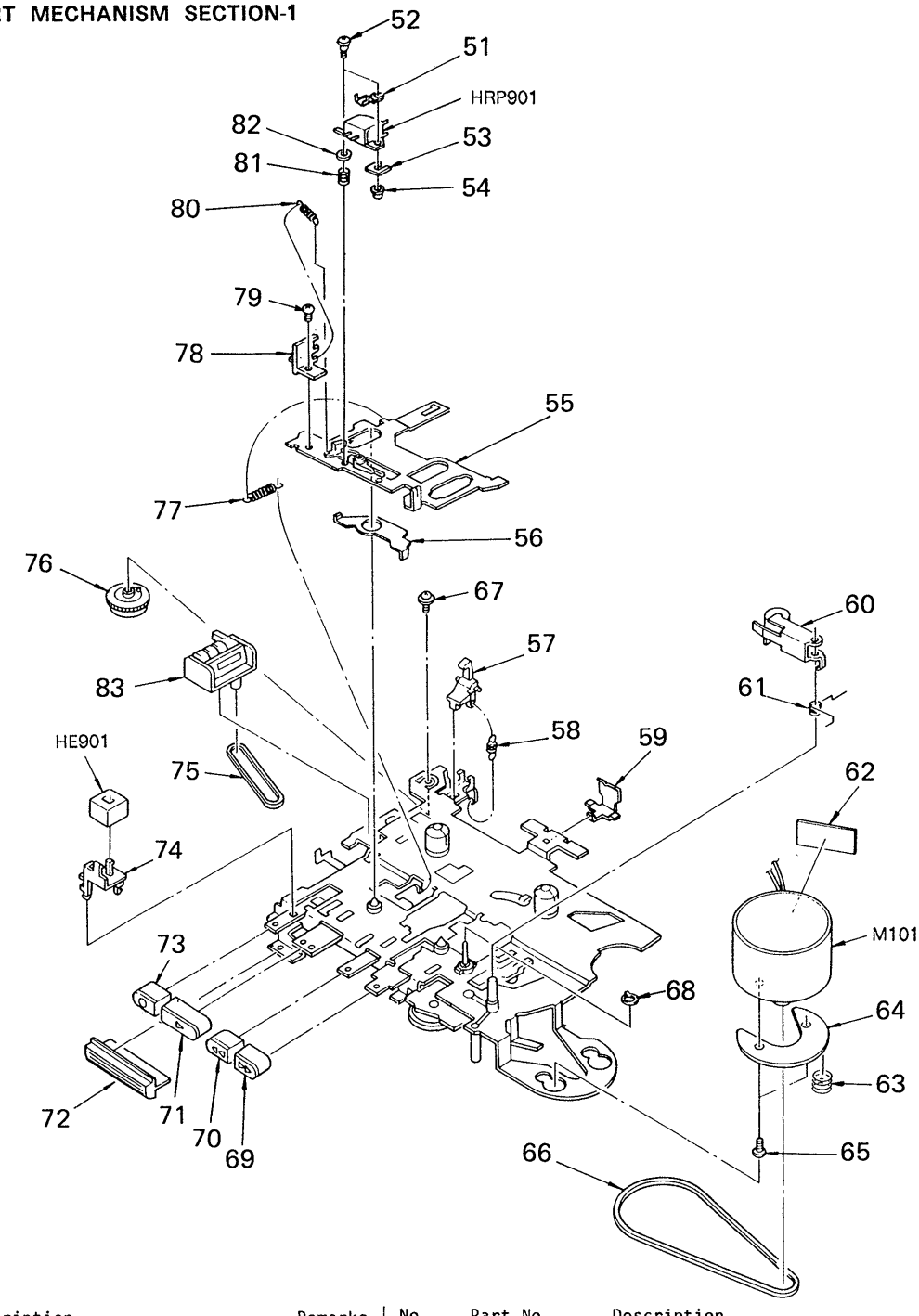
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color

5-1. CABINET SECTION



No.	Part No.	Description	Remarks
1	X-3318-240-1	LID ASSY, CASSETTE	
2	3-831-441-XX	CUSHION	
3	3-318-204-31	SCREW (M1.7X6), TAPPING	
4	3-329-170-01	SPRING	
5	A-3041-121-A	CABINET (UPPER) ASSY	6-8,24-27,34-37
6	3-318-214-01	ARM, TOGGLE	
7	3-318-323-01	RING, RETAINING (3)	
8	9-911-844-XX	CUSHION, SPEAKER	
9	3-318-209-01	TERMINAL BOARD, PLUS	
10	A-3046-078-A	LID ASSY, BATTERY CASE	
11	3-329-128-01	CABINET (LOWER)	
12	3-329-118-01	PLATE, BLIND (A)	
13	3-318-203-71	SCREW (B1.7X5), TAPPING	
14	A-3043-253-A	PANEL ASSY, FRONT	15-19,29-33
15	3-329-134-01	WASHER (DIA.2.1), COTTER	
16	3-329-125-01	BUTTON (START)	
17	3-329-126-01	BUTTON (INDEX)	
18	3-329-122-01	SPRING, COMPRESSION	
19	3-306-145-01	HOLDER (MICROPHONE)	
20	3-329-115-01	COLLAR	
21	3-313-567-01	SCREW (M1.4X3), TAPPING, PWH	
22	9-911-863-XX	PLATE, BLIND	
23	*X-3318-239-1	RIVETING ASSY, REINFORCEMENT	
24	3-318-215-01	SPRING	
25	3-321-022-01	LEVER, EJECT	
26	3-703-357-06	PIN, PARALLEL (DIA. 1.6X14)	
27	3-318-347-01	SPRING, TENSION	
28	3-334-565-11	SCREW (B1.7X10), TAPPING	
29	3-329-116-01	GRILLE, MICROPHONE	
30	*3-329-151-01	PLATE, GROUND, MICROPHONE	
31	*3-329-121-01	HOLDER (MICROPHONE)	
32	*3-329-150-01	PLATE, GROUND, STOP BUTTON	
33	*3-329-149-01	PLATE, GROUND, PAUSE SW	
34	*3-329-153-01	PLATE, GROUND, SELECTION SW	
35	*3-329-154-01	PLATE, GROUND	
36	*3-329-164-01	PLATE (L), GROUND	
37	*3-329-163-01	PLATE (S), GROUND	
38	*3-329-148-01	LUG	
39	*3-329-152-01	PLATE, GROUND, VOLUME	
40	*3-329-161-01	PLATE, GROUND, AMPLIFIER	
901	*A-3015-796-A	PC BOARD ASSY, AUDIO	
902	*1-631-581-11	PC BOARD, SWITCH	
903	*1-631-583-11	PC BOARD, MOTOR	
SP1	1-503-751-11	SPEAKER	
MIC1	1-542-131-11	MICROPHONE, ELECTRET CONDENSER	

5-2. TAPE TRANSPORT MECHANISM SECTION-1
(MB-18-06)

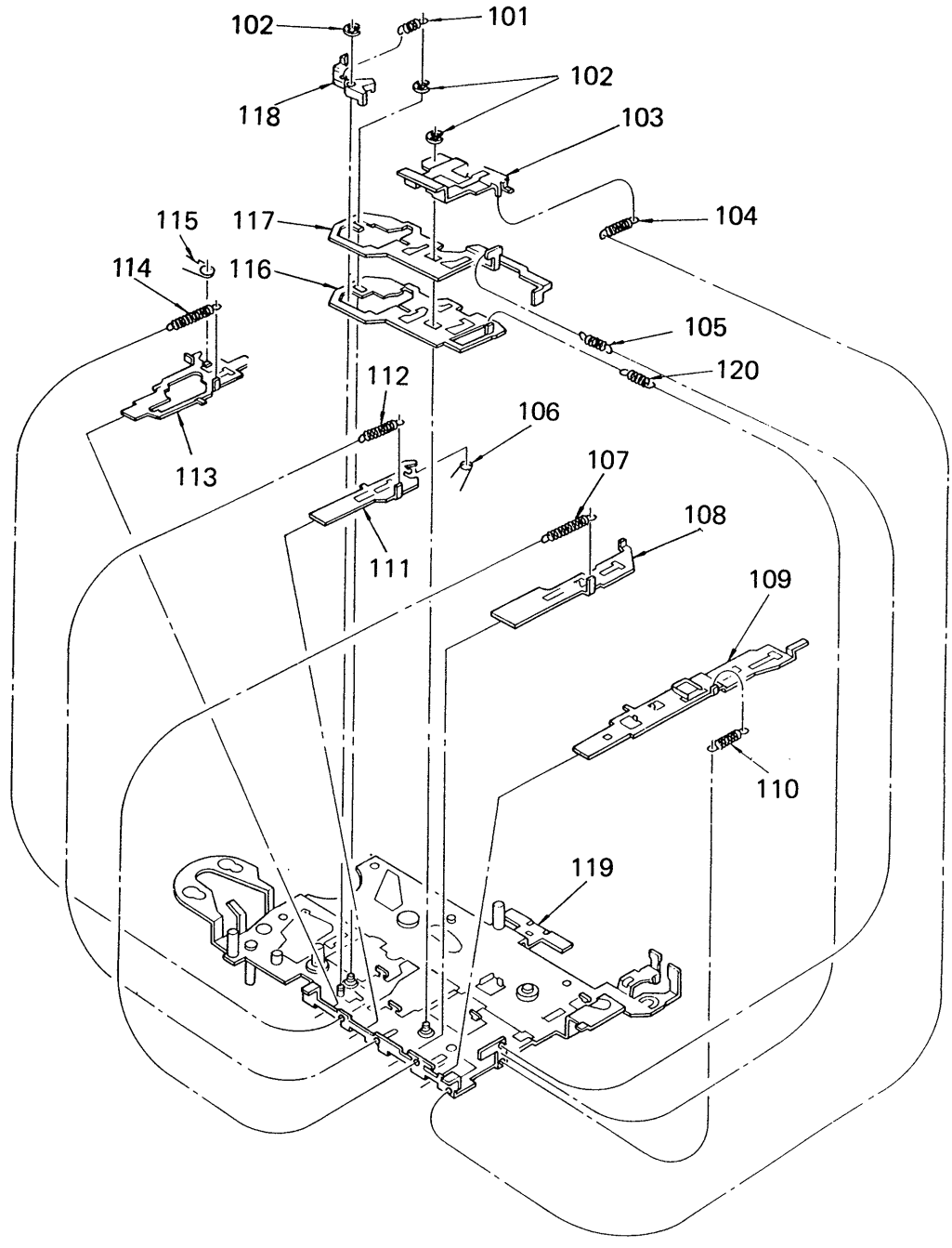


No.	Part No.	Description	Remarks
51	3-322-927-01	RETAINER, LEAD, PB	
52	3-318-240-01	SCREW (1.4), SPECIAL	
53	3-578-138-01	SHIM (t=0.1)	
	3-578-138-11	SHIM (t=0.2)	
	3-578-138-21	SHIM (t=0.3)	
54	3-318-309-01	SPACER, HEAD	
55	X-3318-222-1	CHASSIS ASSY, HEAD	
56	*3-318-267-01	LEVER, CR	
57	3-318-286-01	LEVER, ERASING PROTECTION	
58	3-318-336-01	SPRING, TENSION	
59	3-318-269-01	SPRING	
60	A-3110-010-A	PINCH LEVER ASSY	
61	3-318-275-01	SPRING	
62	3-831-441-11	CUSHION (B)	
63	3-321-067-01	SPRING	
64	3-318-254-11	CUSHION, MOTOR	
65	3-342-026-01	SCREW (M1.7), PRECISION STEP	
66	3-318-242-21	BELT (CAPSTAN)	
67	3-318-201-11	SCREW (B) (1.4X3), TAPPING	

No.	Part No.	Description	Remarks
68	*3-318-353-01	CONDUCTOR (2)	
69	3-346-435-21	BUTTON (FF)	
70	3-346-438-21	BUTTON (REW)	
71	3-346-437-21	BUTTON (LISTEN)	
72	3-329-124-01	BUTTON (STOP)	
73	3-346-439-21	BUTTON (DICT)	
74	3-318-285-01	BRACKET, ERASE HEAD	
75	3-318-239-01	BELT (COUNTER)	
76	3-318-220-01	KNOB, CONTROL (VOL)	
77	3-565-927-00	SPRING, TENSION	
78	3-318-287-01	GUIDE, TAPE	
79	7-627-552-87	SCREW,PRECISION +P 1.7X2.2	
80	3-318-238-01	SPRING, TENSION	
81	3-318-237-01	SPRING, COMPRESSION	
82	7-688-001-01	W 2, SMALL	
83	1-548-541-31	COUNTER	
HE901	8-658-096-02	HEAD, ERASE EBF5-36	
HRP901	1-543-267-21	HEAD, RECORD/PLAYBACK	
M101	1-541-414-11	MOTOR	

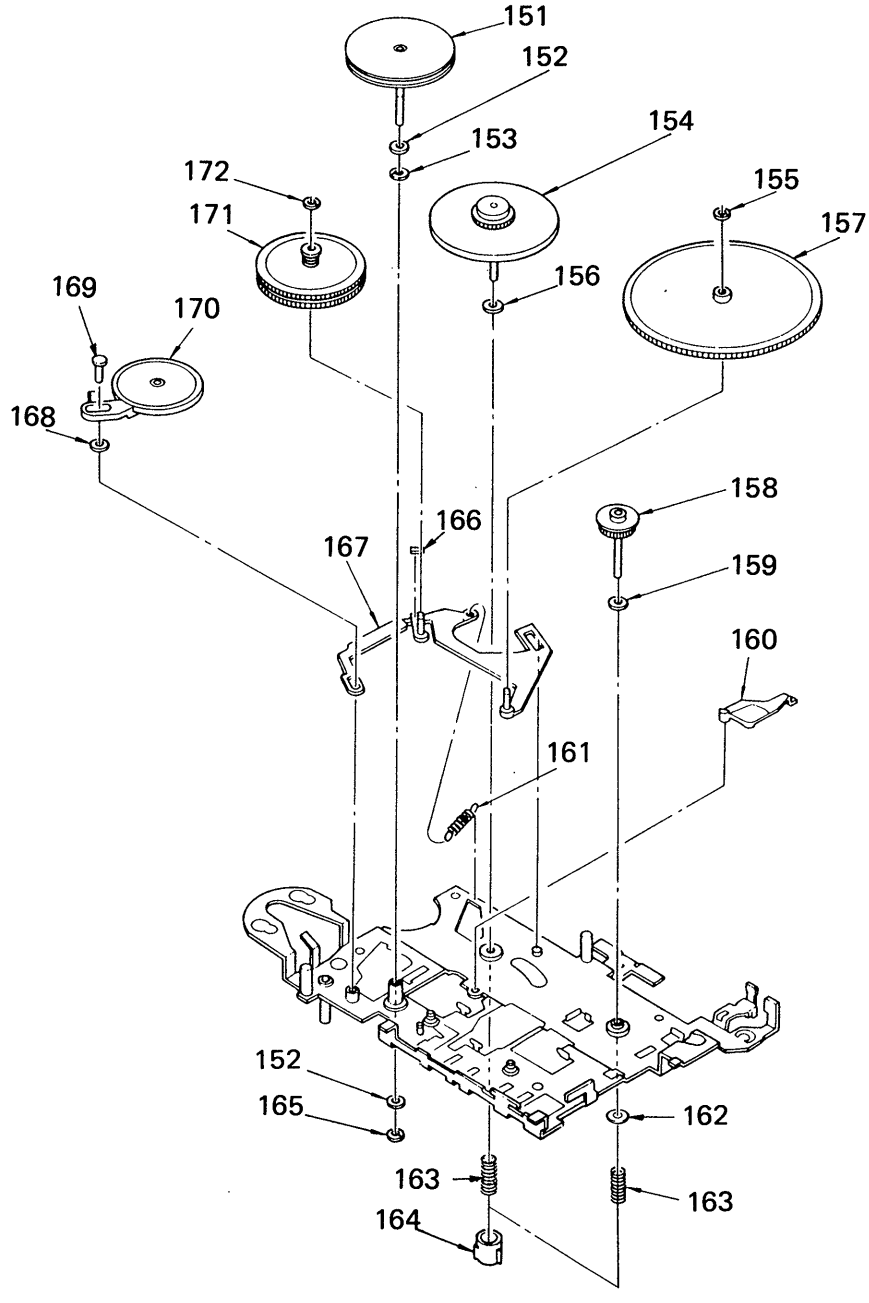
5-3. TAPE TRANSPORT MECHANISM SECTION-2

(MB-18-06)



No.	Part No.	Description	Remarks
101	3-318-351-01	SPRING, TENSION	
102	7-624-101-01	RING, RETAINING E-1.2	
103	*3-318-293-01	LEVER, STOP	
104	3-547-669-00	SPRING, TENSION	
105	3-318-248-01	SPRING, TENSION	
106	3-318-277-01	SPRING, REW	
107	3-318-246-01	SPRING, TENSION	
108	*3-318-290-01	LEVER, LISTEN	
109	*3-318-289-11	LEVER, DICT	
110	3-318-247-01	SPRING, TENSION	
111	3-318-292-01	LEVER, REW	
112	3-318-251-01	SPRING, TENSION	
113	3-318-291-01	LEVER, FR	
114	3-318-250-01	SPRING, TENSION	
115	3-318-276-01	SPRING	
116	*3-318-294-01	PLATE, LOCK	
117	3-318-300-01	LEVER, SWITCH	
118	3-318-296-01	LEVER, SHUT-OFF	
119	X-3318-236-1	CHASSIS ASSY, MECHANICAL	
120	3-570-556-00	SPRING, TENSION	

5-4. TAPE TRANSPORT MECHANISM SECTION-3
(MB-18-06)



No.	Part No.	Description	Remarks
151	X-3313-509-1	FLYWHEEL ASSY	
152	3-701-437-01	WASHER (t=0.13)	
153	3-545-715-00	WASHER (t=0.13)	
154	X-3325-619-1	CLUTCH ASSY	
155	3-570-615-00	POLY-WASHER (DIA.1.2)(t=0.25)	
156	3-701-437-41	WASHER (t=0.35)	
157	3-318-265-01	GEAR (B), FR	
158	X-3318-204-1	GEAR ASSY, REW	
159	3-701-437-21	WASHER (t=0.5)	
160	3-318-288-01	ARM, FF	
161	3-318-243-01	SPRING, TENSION	

No.	Part No.	Description	Remarks
162	3-325-690-01	WASHER, B.T	
163	3-318-241-01	SPRING, COMPRESSION	
164	3-306-836-02	CAP, REEL, T	
165	3-318-236-01	WASHER, POLY, SLIT	
166	3-831-441-XX	CUSHION	
167	X-3318-208-1	LEVER ASSY, FR	
168	3-827-323-11	WASHER (DIA. 3.1)(t=0.08)	
169	3-318-324-01	BUSHING, IDLER LEVER	
170	X-3318-210-1	LEVER ASSY, FWD IDLER	
171	X-3318-237-1	GEAR (A) ASSY, FR	
172	3-578-265-11	WASHER, STOPPER (t=0.25)	

SECTION 6
ELECTRICAL PARTS LIST

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.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

Ref.No.	Part No.	Description		
901	*A-3015-796-A	PC BOARD ASSY, AUDIO		
902	*1-631-581-11	PC BOARD, SWITCH		
903	*1-631-583-11	PC BOARD, MOTOR		
C1	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C2	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C3	1-163-009-11	CERAMIC CHIP 0.001MF		50V
C4	1-162-610-00	CERAMIC CHIP 0.47MF		25V
C5	1-126-157-11	ELECT 10MF	20%	6.3V
C6	1-124-432-00	ELECT 47MF	20%	4V
C7	1-124-499-11	ELECT(NONPOLAR)1MF	20%	50V
C8	1-124-430-00	ELECT 22MF	20%	4V
C9	1-163-009-11	CERAMIC CHIP 0.001MF		50V
C10	1-124-436-00	ELECT 3.3MF	20%	25V
C11	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V
C12	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C13	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V
C14	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C15	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C16	1-126-157-11	ELECT 10MF	20%	6.3V
C17	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C18	1-124-430-00	ELECT 22MF	20%	4V
C19	1-162-610-00	CERAMIC CHIP 0.47MF		25V
C20	1-163-009-11	CERAMIC CHIP 0.001MF		50V
C21	1-131-388-00	TANTALUM 68MF	10%	3.15V
C22	1-126-157-11	ELECT 10MF	20%	6.3V
C23	1-163-009-11	CERAMIC CHIP 0.001MF		50V
C24	1-126-157-11	ELECT 10MF	20%	6.3V
C25	1-126-157-11	ELECT 10MF	20%	6.3V
C26	1-126-157-11	ELECT 10MF	20%	6.3V
C27	1-124-431-00	ELECT 33MF	20%	4V
C28	1-126-177-11	ELECT 100MF	20%	6.3V
C29	1-163-009-11	CERAMIC CHIP 0.001MF		50V
C30	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C31	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C32	1-124-431-00	ELECT 33MF	20%	4V
C33	1-126-157-11	ELECT 10MF	20%	6.3V
C34	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C35	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C36	1-124-430-00	ELECT 22MF	20%	4V
C37	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C38	1-163-053-00	CERAMIC CHIP 0.0033MF	10%	50V
C39	1-124-432-00	ELECT 47MF	20%	4V
C40	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V
C41	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C42	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C43	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C44	1-126-156-11	ELECT 4.7MF	20%	16V
C45	1-126-157-11	ELECT 10MF	20%	6.3V
C46	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C47	1-163-009-11	CERAMIC CHIP 0.001MF		50V
C48	1-163-009-11	CERAMIC CHIP 0.001MF		50V
C49	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C50	1-126-157-11	ELECT 10MF	20%	6.3V
C51	1-162-610-00	CERAMIC CHIP 0.47MF		25V
C52	1-162-610-00	CERAMIC CHIP 0.47MF		25V
C101	1-126-157-11	ELECT 10MF	20%	6.3V
C102	1-126-154-11	ELECT 47MF	20%	6.3V
C103	1-163-038-00	CERAMIC CHIP 0.1MF		25V
D1	8-719-915-54	DIODE SLP159B (DICT/BATT)		
D2	8-719-911-19	DIODE 1SS119		
D101	8-719-911-19	DIODE 1SS119		
HE901	8-658-096-02	HEAD, ERASE EBF5-36		
HRP901	1-543-267-21	HEAD, RECORD/PLAYBACK		
IC1	8-752-010-71	IC CX20107		
IC2	8-759-700-07	IC NJM2903M		
IC101	8-759-820-70	IC LA5524M		
J1	1-563-319-21	JACK (MIC PLUG IN POWER)		
J2	1-563-319-21	JACK (EAR)		
J3	1-565-074-21	JACK, OUTER POWER 1P (DC IN 3V)		
M101	1-541-414-11	MOTOR		
MIC1	1-542-131-11	MICROPHONE, ELECTRET CONDENSER		
Q1	8-729-805-91	TRANSISTOR 2SA1563		
Q2	8-729-805-94	TRANSISTOR 2SC4047		
Q3	8-729-800-37	TRANSISTOR 2SD1048-X7		
Q4	8-729-271-33	TRANSISTOR 2SC2712		
Q5	8-729-271-33	TRANSISTOR 2SC2712		
Q6	8-729-271-33	TRANSISTOR 2SC2712		
Q7	8-729-271-33	TRANSISTOR 2SC2712		
R1	1-249-420-11	CARBON 1.8K	5%	1/4W
R2	1-249-399-11	CARBON 33	5%	1/4W
R3	1-249-413-11	CARBON 470	5%	1/4W
R4	1-249-426-11	CARBON 5.6K	5%	1/4W
R5	1-249-421-11	CARBON 2.2K	5%	1/4W
R6	1-249-411-11	CARBON 330	5%	1/4W
R7	1-249-417-11	CARBON 1K	5%	1/4W
R8	1-249-434-11	CARBON 27K	5%	1/4W
R9	1-215-412-00	METAL 430	1%	1/6W
R10	1-249-437-11	CARBON 47K	5%	1/4W
R11	1-249-424-11	CARBON 3.9K	5%	1/4W
R12	1-249-417-11	CARBON 1K	5%	1/4W

• Repairing printed resistor

Cut both sides of the resistor and solder the carbon resistor having same value in place of printed one of the conductor side.

1/4W carbon resistor is supplied for the replacing part of the printed resistor.

SEE ADDITIONAL INFORMATION

Ref.No.	Part No.	Description			
R13	1-249-431-11	CARBON	15K	5%	1/4W
R14	1-215-485-00	METAL	470K	1%	1/6W
R15	1-249-441-11	CARBON	100K	5%	1/4W
R16	1-216-158-00	METAL GLAZE	22	5%	1/8W
R17	1-249-424-11	CARBON	3.9K	5%	1/4W
R18	1-249-429-11	CARBON	10K	5%	1/4W
R19	1-249-441-11	CARBON	100K	5%	1/4W
R20	1-216-140-00	METAL GLAZE	3.9	5%	1/8W
R21	1-216-140-00	METAL GLAZE	3.9	5%	1/8W
R22	1-216-150-00	METAL GLAZE	10	5%	1/8W
R23	1-249-417-11	CARBON	1K	5%	1/4W
R24	1-249-429-11	CARBON	10K	5%	1/4W
R25	1-249-414-11	CARBON	560	5%	1/4W
R26	1-249-405-11	CARBON	100	5%	1/4W
R27	1-249-419-11	CARBON	1.5K	5%	1/4W
R28	1-215-483-00	METAL	390K	1%	1/6W
R29	1-215-485-00	METAL	470K	1%	1/6W
R30	1-249-441-11	CARBON	100K	5%	1/4W
R31	1-215-473-00	METAL	150K	1%	1/6W
R32	1-249-439-11	CARBON	68K	5%	1/4W
R33	1-249-417-11	CARBON	1K	5%	1/4W
R34	1-249-429-11	CARBON	10K	5%	1/4W
R35	1-249-428-11	CARBON	8.2K	5%	1/4W
R36	1-249-407-11	CARBON	150	5%	1/4W
R37	1-249-404-00	CARBON	82	5%	1/4W
R38	1-249-405-11	CARBON	100	5%	1/4W
R39	1-249-407-11	CARBON	150	5%	1/4W
R40	1-249-438-11	CARBON	56K	5%	1/4W
R41	1-215-477-00	METAL	220K	1%	1/6W
R42	1-249-435-11	CARBON	33K	5%	1/4W
R43	1-249-441-11	CARBON	100K	5%	1/4W
R44	1-249-426-11	CARBON	5.6K	5%	1/4W
R45	1-215-477-00	METAL	220K	1%	1/6W
R46	1-216-270-00	METAL GLAZE	1M	5%	1/8W
R47	1-249-441-11	CARBON	100K	5%	1/4W
R48	1-215-477-00	METAL	220K	1%	1/6W
R49	1-216-270-00	METAL GLAZE	1M	5%	1/8W
R50	1-249-429-11	CARBON	10K	5%	1/4W
R51	1-249-405-11	CARBON	100	5%	1/4W
R52	1-249-415-11	CARBON	680	5%	1/4W
R101	1-249-433-11	CARBON	22K	5%	1/4W
R102	1-249-426-11	CARBON	5.6K	5%	1/4W
R103	1-249-417-11	CARBON	1K	5%	1/4W
R104	1-249-428-11	CARBON	8.2K	5%	1/4W
R105	1-249-427-11	CARBON	6.8K	5%	1/4W

Ref.No.	Part No.	Description			
R106	1-249-414-11	CARBON	560	5%	1/4W
R107	1-249-414-11	CARBON	560	5%	1/4W
RV1	1-228-121-00	RES, VAR, CARBON 10K (VOL)			
RV101	1-230-720-11	RES, ADJ, CARBON 5K (TAPE SPEED)			
SP1	1-503-751-11	SPEAKER			
SW1	1-554-297-00	SWITCH, LEAF (POWER)			
SW2	1-554-745-11	SWITCH, SLIDE (LISTEN/DICT)			
SW3	1-554-123-00	SWITCH, SLIDE (TONE/MIC SENS)			
SW4	1-554-813-11	SWITCH, KEY BOARD (E-IDX)			
SW5	1-553-510-00	SWITCH, SLIDE (START/STOP)			
SW101	1-571-478-11	SWITCH, SLIDE (TAPE SPEED)			
SW201	1-570-331-11	SWITCH, SLIDE (FAST-PB)			
SW202	1-570-056-11	SWITCH, SLIDE (VOR)			
T1	1-433-251-00	TRANSFORMER, BIAS OSCILLATOR			
TH101	1-808-837-11	THERMISTOR, POSITIVE 180 (3600)			
TH102	1-808-836-11	THERMISTOR, POSITIVE 2.2K (2400)			

ACCESSORY & PACKING MATERIAL

*3-329-111-01	CUSHION
*3-329-112-01	INDIVIDUAL CARTON
3-329-133-01	CASE, CARRYING
3-750-559-21	MANUAL, INSTRUCTION (ENGLISH/FRENCH/GERMAN)

9-953-808-11

Sony Corporation
Audio Group

English
8910229-1
Printed in Japan

Published by Customer Relations and Service Group

BM-18

SONY

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

SUPPLEMENT-1

File this Supplement with the Service Manual.

Subject : Printed Wiring Boards and Schematic Diagrams have been changed.

- Applicable Serial No.
  US Model : 11701 and later
  Other Models : 15001 and later

• **CHANGED PARTS**

Page	Former Type			New Type		
13	No.	Part No.	Description	Part No.	Description	
	7	3-318-323-01	RING, RETAINING (3)	7-624-104-04	STOP RING 2.0, TYPE-E	
	27	3-318-347-01	SPRING, TENSION	3-329-179-01	SPRING, TENSION	
	37	*3-329-163-01	PLATE (S), GROUND	Deleted	(See Fig. A)	
17	Ref. No.	Part No.	Description	Part No.	Description	
	C7	1-124-499-11	ELECT (NONPOLAR) 1MF 20% 50V	1-124-766-00	ELECT (NONPOLAR) 0.1MF 20% 50V	
	C50	1-126-157-11	ELECT 10MF 20% 6.3V	1-135-157-21	ELECT 10MF 20% 4V	
18	R36	1-249-407-11	CARBON 150 5% 1/4W	1-249-405-11	CARBON 100 5% 1/4W	
	R50	1-249-429-11	CARBON 10K 5% 1/4W	1-249-425-11	CARBON 4.7K 5% 1/4W	

Deleted

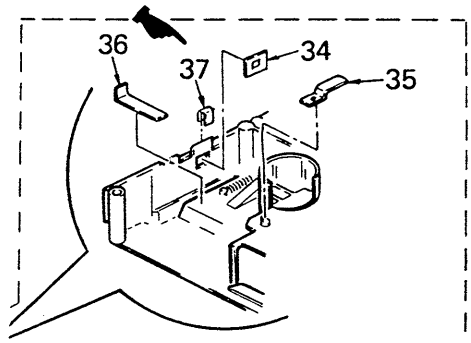


Fig. A

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

【MOTOR BOARD】

【AUDIO BOARD】

【SWITCH BOARD】

J3 DC IN 3V EXT, POWER

DRY BATTERY SIZE "AA" (IEC DESIGNATION R6) 2 PCS, 3V

RVI VOLUME

SW101 SPEED 4.8cm/SEC 2.4cm/SEC

M101 MOTOR

SP1 SPEAKER

SW201 FAST-PB NORMAL→FAST-PB

SW202 VOR OFF→LO→H

SW5 START/STOP STOP←START

SW2 LISTEN/DICT DICT/LISTEN

SW1 POWER

SW3 TONE/MIC SENS H↓L

SW4 E-INDEX

J2 EAR

MIC1 MICROPHONE

J1 MIC PLUG IN POWER

D1 DICT/BATT

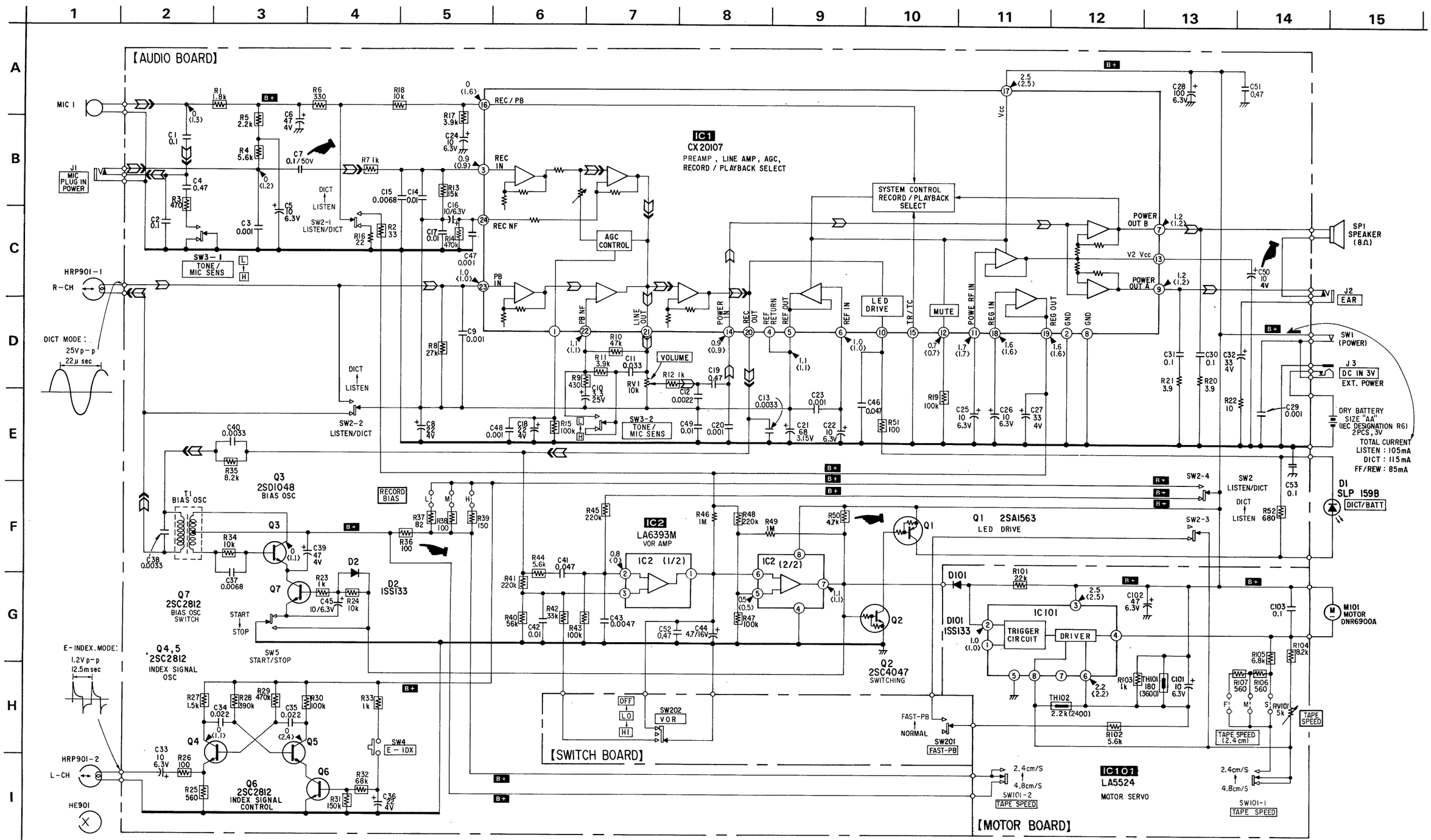
HRP901

(CHASSIS)

1-701-581-12

SCHEMATIC DIAGRAM

: Changed portion



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 1/8W or less unless otherwise specified.
- : printed resistor.
- B+ : B+ Line
- : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is dc 2.5V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : LISTEN
  〈 〉: DICT
- Voltages are taken with a VOM (Input impedance 50kΩ/V). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : LISTEN
  : DICT

A

B

C

D

E

F

G

H

I

• SEMICONDUCTOR LOCATION

Ref. No.	Location
IC1	D-9
IC2	C-6
IC101	C-2
Q1	F-10
Q2	E-10
Q3	D-7
Q4	D-6
Q5	E-6
Q6	D-6
Q7	H-8
D1	I-13
D2	H-8
D101	C-3

CORRECTION

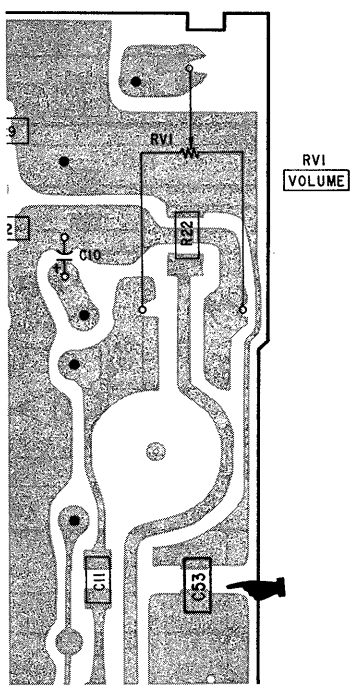
Please correct your service manual.

☛ : Corrected portion

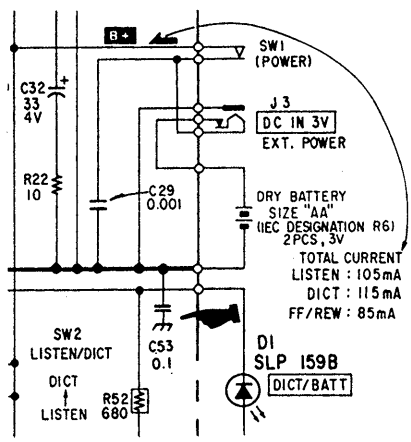
Page	Incorrect			Correct	
	Ref. No.	Part No.	Description	Part No.	Description
17	Q4	8-729-271-33	TRANSISTOR 2SC2712	8-729-271-23	TRANSISTOR 2SC2712
	Q5	8-729-271-33	TRANSISTOR 2SC2712	8-729-271-23	TRANSISTOR 2SC2712
	Q6	8-729-271-33	TRANSISTOR 2SC2712	8-729-271-23	TRANSISTOR 2SC2712
	Q7	8-729-271-33	TRANSISTOR 2SC2712	8-729-271-23	TRANSISTOR 2SC2712

- Add C53 as follows because it is missing in the service manual previously issued.

Page 10



Page 12



Page 17

Ref. No.	Part No.	Description
☛C53	1-163-038-00	CERAMIC CHIP 0.1MF 25V

9-953-808-81

Sony Corporation
General Audio Group

English
90E0229-1
Printed in Japan

Published by Customer Relations and Service Group

BM-18

SONY
SERVICE MANUAL

US Model
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E Model

CORRECTION-1

Correct your service manual as shown below.

☛ : **indicates corrected portion.**

Page	INCORRECT			CORRECT	
	No.	Part No.	Description	Part No.	Description
17	IC101	8-759-820-70	IC LA5524M	8-759-801-19 ☛	IC LA5524

9-953-808-91

Sony Corporation
General Audio Group

English
92L0235-1
Printed in Japan

Published by Audio Corporate Planning Group