

# TCM-59V

## SERVICE MANUAL



*US Model  
Canadian Model  
AEP Model  
UK Model  
E Model*

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MT-59-30

### SPECIFICATIONS

**Recording system**

2-track 1 channel monaural

**Frequency range**

150-8,000Hz

**Speaker**

Twin speakers, approx. 3.6 cm (1 7/16 in.) dia.

**Power output**

350 mW (at 10% harmonic distortion)

**Input**

Microphone input jack (minijack) sensitivity 0.21 mV for 3 kilohms or lower impedance microphone

**Output**

Earphone jack (minijack) for 8-300 ohms earphone

**Power requirements**

- Two R6 (size AA) batteries (not supplied): 3V DC  
DC IN 3V jack accepts:
- Sony AC-E30HG AC power adaptor (not supplied) suitable in the country where the unit is to be used.
- Sony DCC-E130L car battery cord (not supplied) for use on 12 V car battery.

**Dimensions (w/h/d)(incl. projecting parts and controls)**

Approx. 88.7 × 113.0 × 37.2mm  
(3 1/2 × 4 1/2 × 1 1/2 in.)

**Mass(not incl. batteries)**

Approx. 220 g (7.8 oz)

Design and specifications are subject to change without notice.

CASSETTE RECORDER  
**SONY**®

## SECTION 1 GENERAL

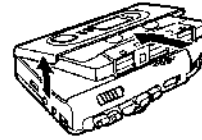
This section is extracted from instruction manual.

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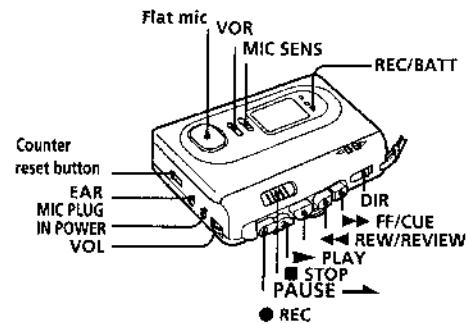
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**B**

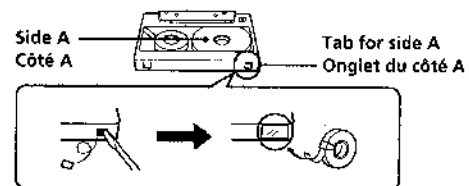
(a)



(b)

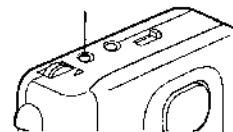


(c)

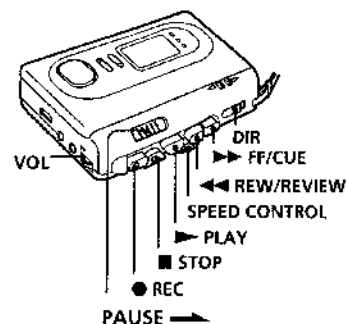


**C**

MIC PLUG IN POWER



**D**



### Flexible Circuit Board Repairing

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

### 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.

## SECTION 2

### SERVICE NOTE

In this set, the PH701 (photoreflexor) detects rotation of S/T reels. It is mounted on the main board, and therefore the reel rotation cannot be detected with the main board removed.

If it is removed, the auto stop functions. When making an operation check and voltage check of mechanical deck with the main board removed, perform as follows.

#### How to remove main board (how to open the set)

- 1) Remove two screws.
- 2) Remove the mic flexible board W101.

#### FF/REW mode

- 1) Apply a square wave signal to hall sensor TP23. (See the following figure.)
- 2) Press the FF or REW switch.
- 3) Turn on the S104 switch.

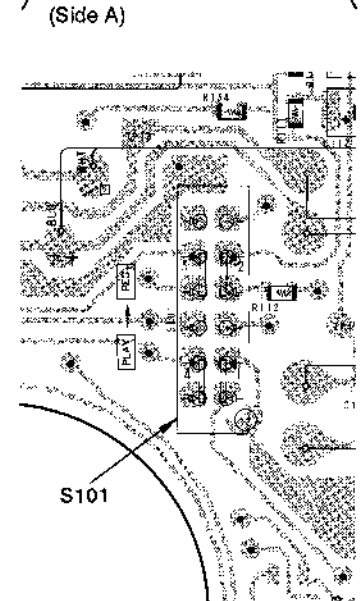
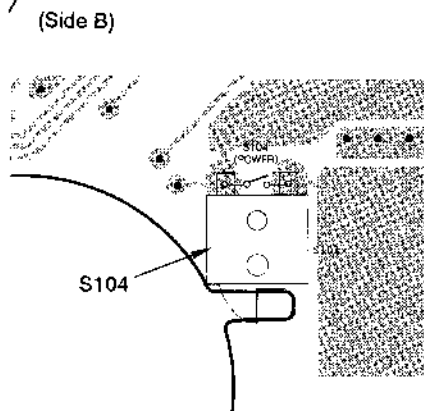
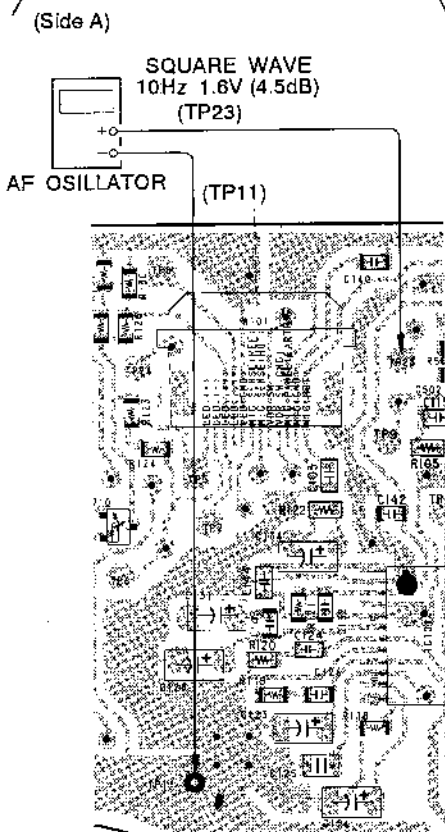
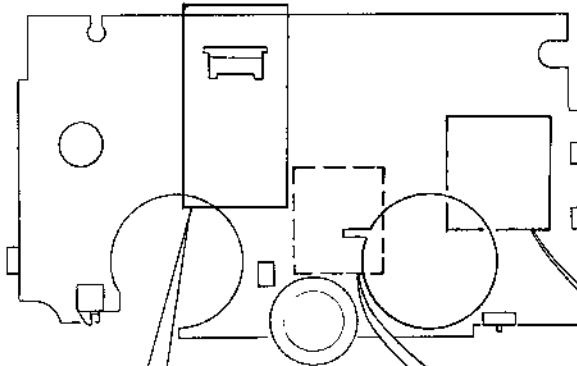
#### PLAY mode

- 1) Apply a square wave signal to hall sensor TP23. (See the following figure.)
- 2) Press the PLAY switch.
- 3) Change over the S101 to PB.
- 4) Turn on the S104 switch.

#### REC mode

- 1) Apply a square wave signal to hall sensor TP23. (See the following figure.)
- 2) Press the REC switch.
- 3) Change over the S101 to REC.
- 4) Turn on the S104 switch.

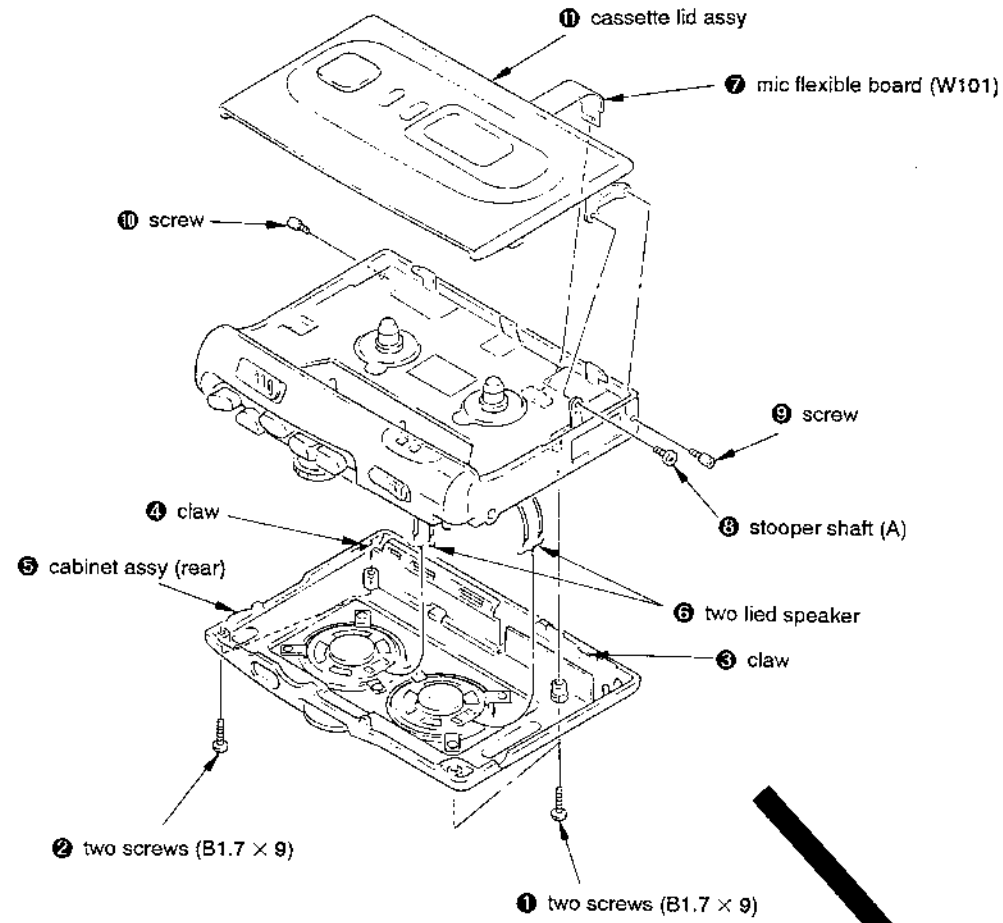
**MAIN BOARD (Side A)**



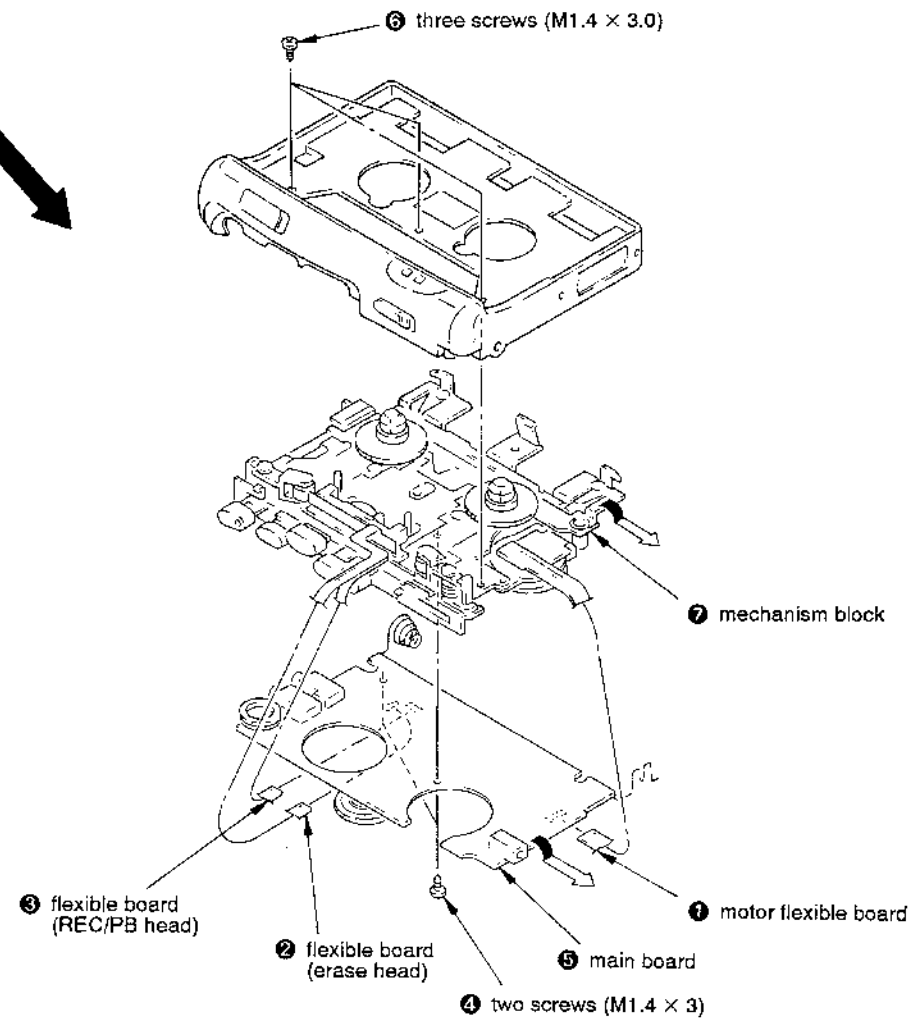
## SECTION 3 DISASSEMBLY

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

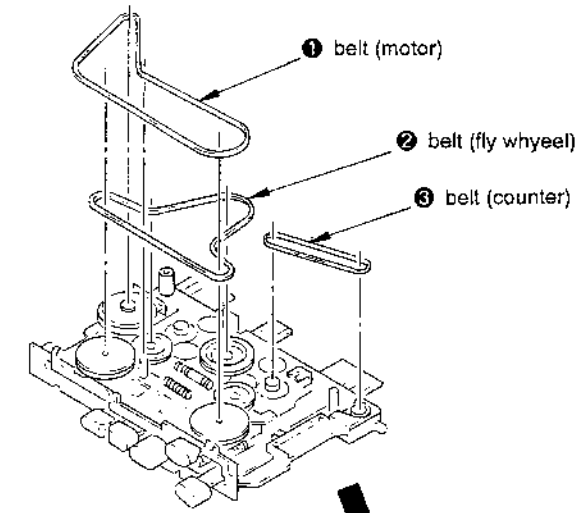
### CABINET, LID ASSY CASSETTE



### MAIN BOARD, MECHANISM BLOCK

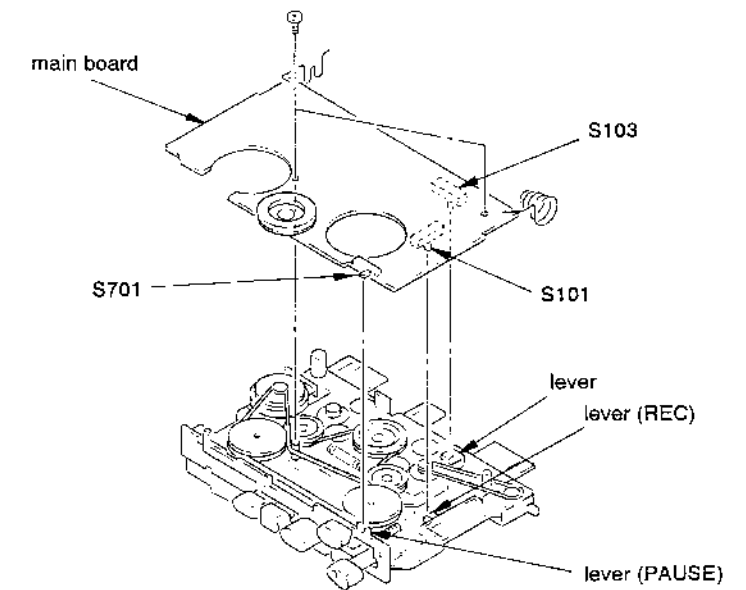


### BELT



### HOW TO THE MAIN BOARD

Check that switch S101, 103, 701 is latched with lever (REC), lever, lever (PAUSE) when carrying out installation of the main board.



## SECTION 4 MECHANICAL ADJUSTMENTS

### PRECAUTION

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

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
2. Demagnetize the record/playback head with a head demagnetizer. (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 (3 V) unless otherwise noted.

### Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	20 – 35 g•cm (0.28 – 0.48 oz•inch)
FWD Back Tension		0.5 – 5 g•cm (0.007 – 0.069 oz•inch)
REV	CQ-102RC	20 – 35 g•cm (0.28 – 0.48 oz•inch)
REV Back Tension		0.5 – 5 g•cm (0.007 – 0.069 oz•inch)
FF	CQ-201B	more than 40 g•cm (more than 0.56 oz•inch)
REW		

### Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 60 g (more than 0.84 oz•inch)
REV	CQ-403R	

## SECTION 5 ELECTRICAL ADJUSTMENTS

### PRECAUTION

1. Perform adjustment under the following condition, unless otherwise specified.
  - Positions of switches and control knobs
 

VOLUME knob	.....	maximum
FWD/REV switch	.....	FWD
SPEED CONTROL knob	.....	mechanical center
VOR switch	.....	OFF

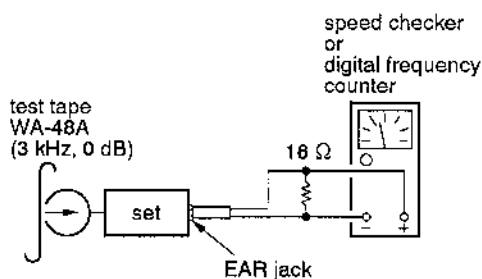
### • Test tape

Type	signal	Used for
WS-48A	3 kHz, 0 dB	tape speed adjustment

### Tape Speed Adjustment

#### Procedure:

**Mode:** FWD playback

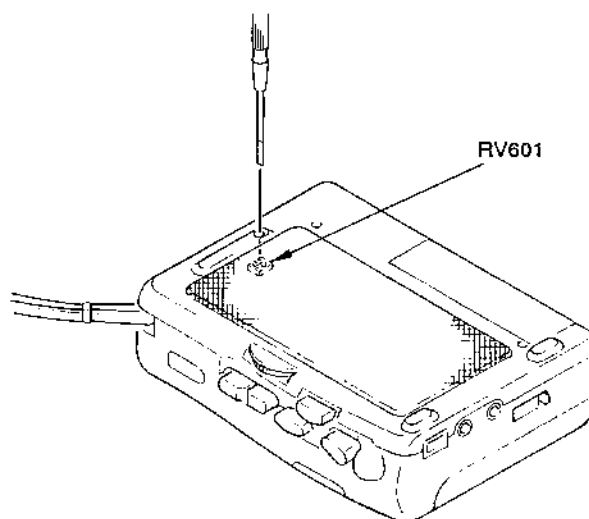


#### Adjustment Value:

Speed checker	Digital frequency counter
3,000 Hz	2,970–3,030 Hz

Adjust the RV601 so that a difference in frequency at the start of tape winding and at the end of winding is within 1% (30 Hz) respectively. After adjustment, select the REV PLAY mode, and confirm that the characteristics satisfy the standard.

#### Adjustment Location: MAIN BOARD



SECTION 6  
DIAGRAMS

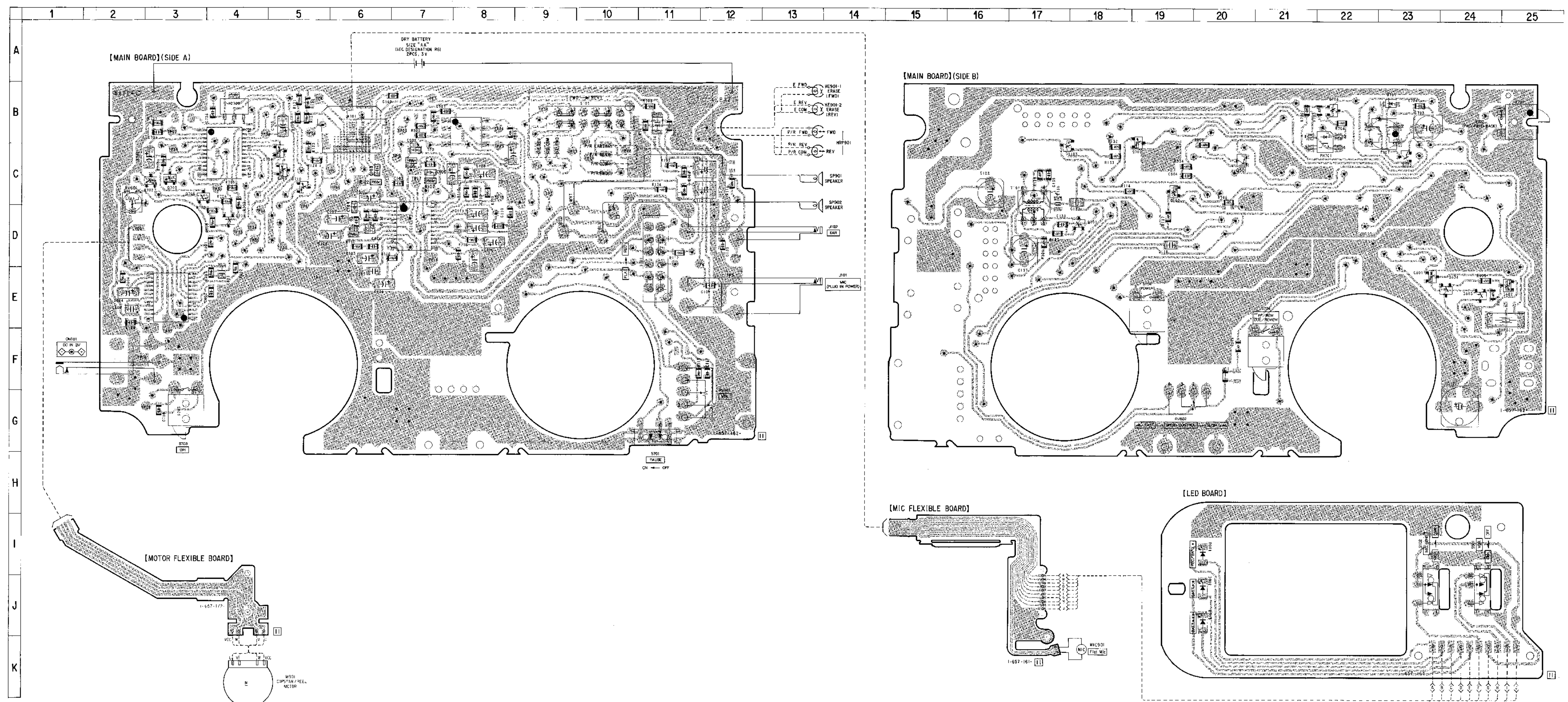
6-1. PRINTED WIRING BOARDS

• Semiconductor Location

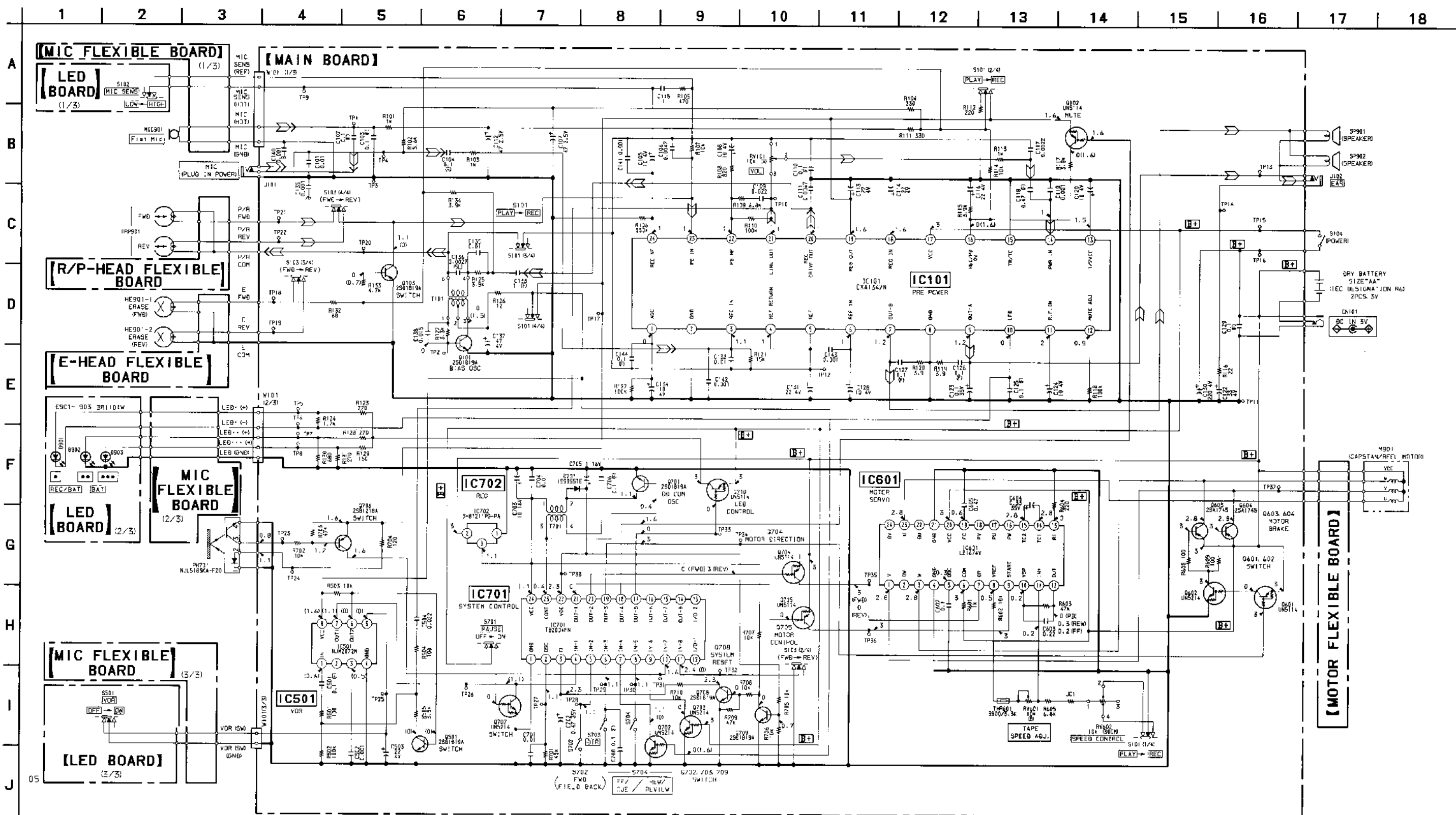
Ref. No.	Location
D701	B-23
D801	I-20
D902	J-20
D903	J-20
IC101	D-7
IC501	B-8
IC601	E-3
IC701	C-4
IC702	B-4
Q101	D-18
Q102	C-19
Q103	C-18
Q501	C-20
Q601	E-23
Q602	E-25
Q603	E-24
Q604	E-24
Q701	C-23
Q702	C-3
Q703	C-3
Q704	C-5
Q705	C-5
Q706	B-22
Q707	C-19
Q708	C-5
Q709	D-4
Q710	C-5

Note:  
 • — : parts extracted from the component side.  
 • ● : Through hole.  
 • ◐ : Pattern from the side which enables seeing.  
 (The other layers' patterns are not indicated.)

Caution:  
 Pattern face side: Parts on the pattern face side seen from (Conductor Side) the pattern face are indicated.  
 Parts face side: Parts on the parts face side seen from the (Component Side) parts face are indicated.



6-2. SCHEMATIC DIAGRAM

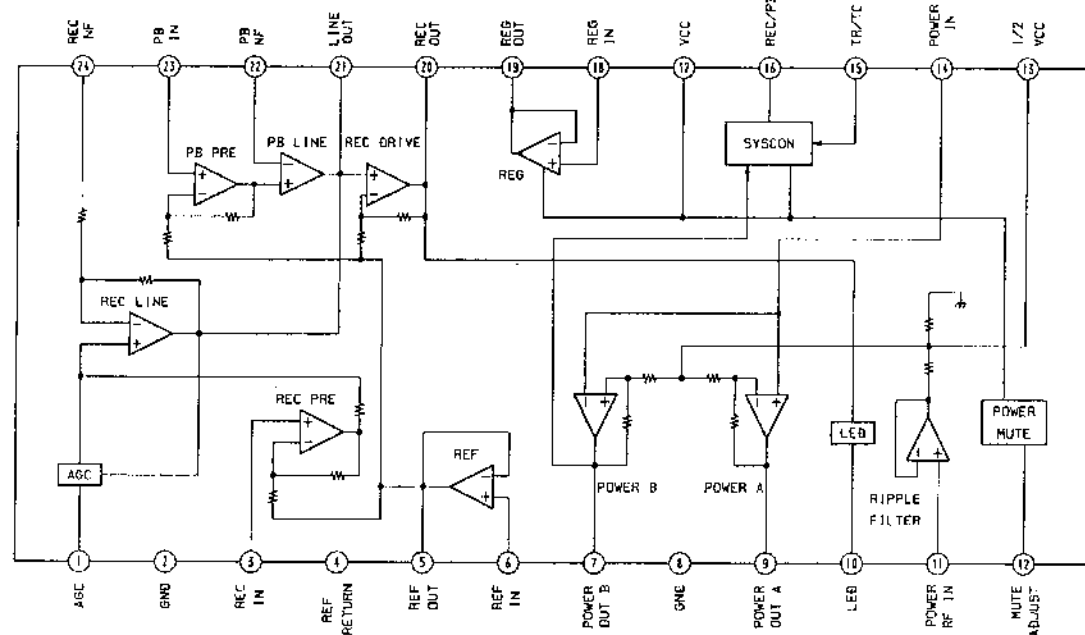


NOTE

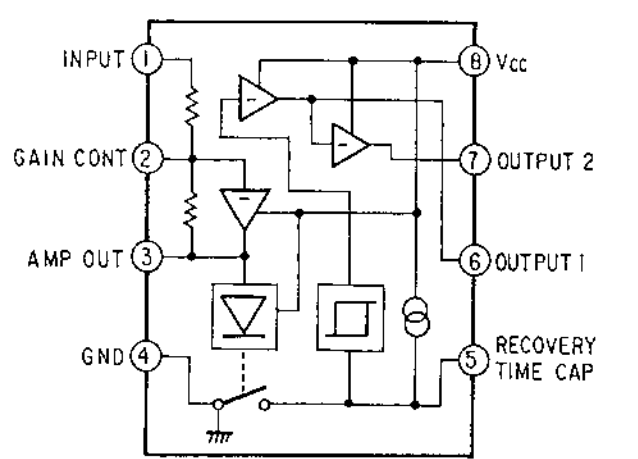
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF} = \mu\text{F} \times 10^{-6}$ .  $50\text{W}$  or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- PCB designations: ( ) : PCB designation.
- ⊕ : RT line.
- ⊖ : adjustment for repair.
- Voltages are dc with respect to ground under no-signal (de-turned) conditions, no motor: P3 ( ) : REC.
- Voltages are taken with a VOM (input impedance  $10\text{M}\Omega$ ). Vc tape variations may be noted due to normal production tolerances.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.
- Sgnal path.
- ⊳ : PB.
- ⊳⊳ : REC.

IC Block Diagrams

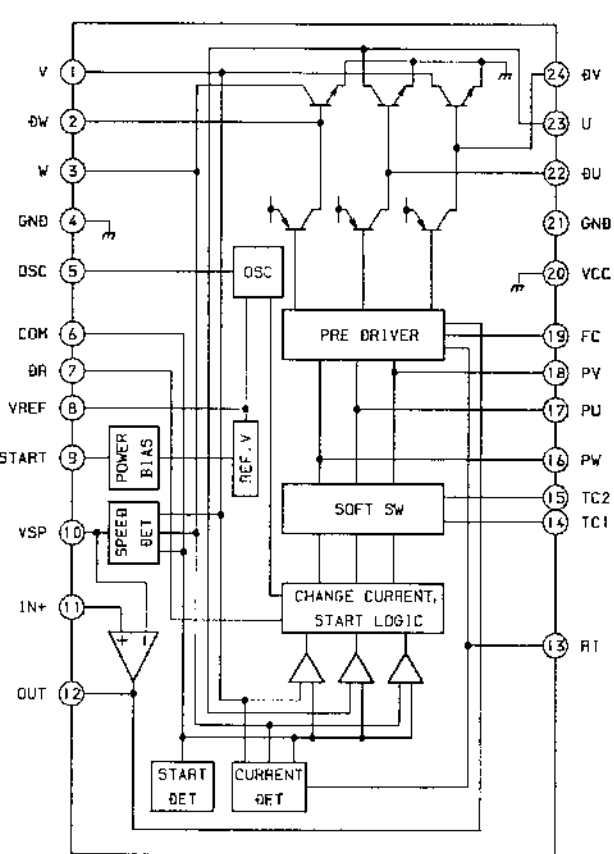
IC101 CX1347N



IC501 NJM2072M



IC601 LB1674V



### 6-3. IC PIN FUNCTION

#### MAIN BOARD IC701 TB2004FN-016-ER (System Control)

Pin No.	Pin Name	I/O	Function
1	GND	---	GND
2	OSC	—	For system clock generation (fosc=3.2 kHz)
3	CL	I	RESET input
4	IN-1	I	Pause ON/OFF by PAUSE SW and VOR "L": ON, "H": OFF
5	IN-2	I	FWD reset by cassette cover open-close "L": ON, "H": OFF
6	IN-3	I	Direction "L": ON, "H": OFF
7	IN-4	I	REC/PB switching "L": REC, "H": PB
8	IN-5	I	FF/REW "L": ON, "H": OFF
9	IN-6	I	POWER ON/OFF "L": ON, "H": OFF
10	IN-7	I	Photoreflector pulse input for tape end detection
11	IN-8	I	FWD/REV switching "L": FWD, "H": REV
12	I/O-1	—	Not used
13	I/O-2	---	Not used
14	OUT-8	---	Not used
15	OUT-7	—	Not used
16	OUT-6	—	Not used
17	OUT-5	O	LED ON/OFF "L": ON, "H": OFF
18	OUT-4	O	Audio mute "L": ON, "H": OFF
19	OUT-3	O	Motor breake "L": ON, "H": OFF
20	OUT-2	O	Motor direction "L": FWD, "H": REV
21	OUT-1	O	Motor ON/OFF "L": ON, "H": OFF
22	VDD	—	Power supply for CMOS
23	CONT	O	Boosting circuit control output
24	VCC	—	Power supply for bipolar

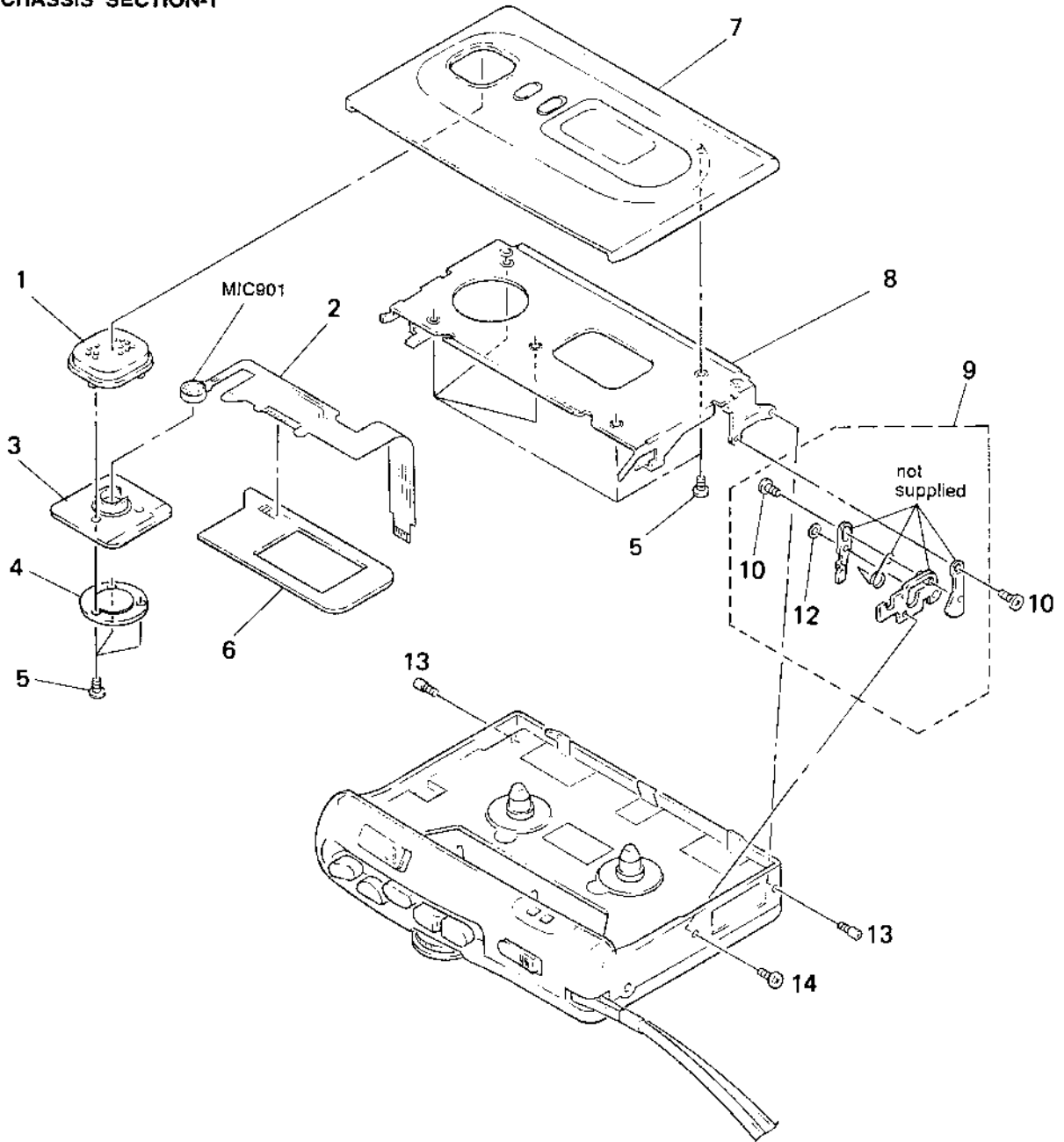


## SECTION 7 EXPLODED VIEWS

**NOTE:**

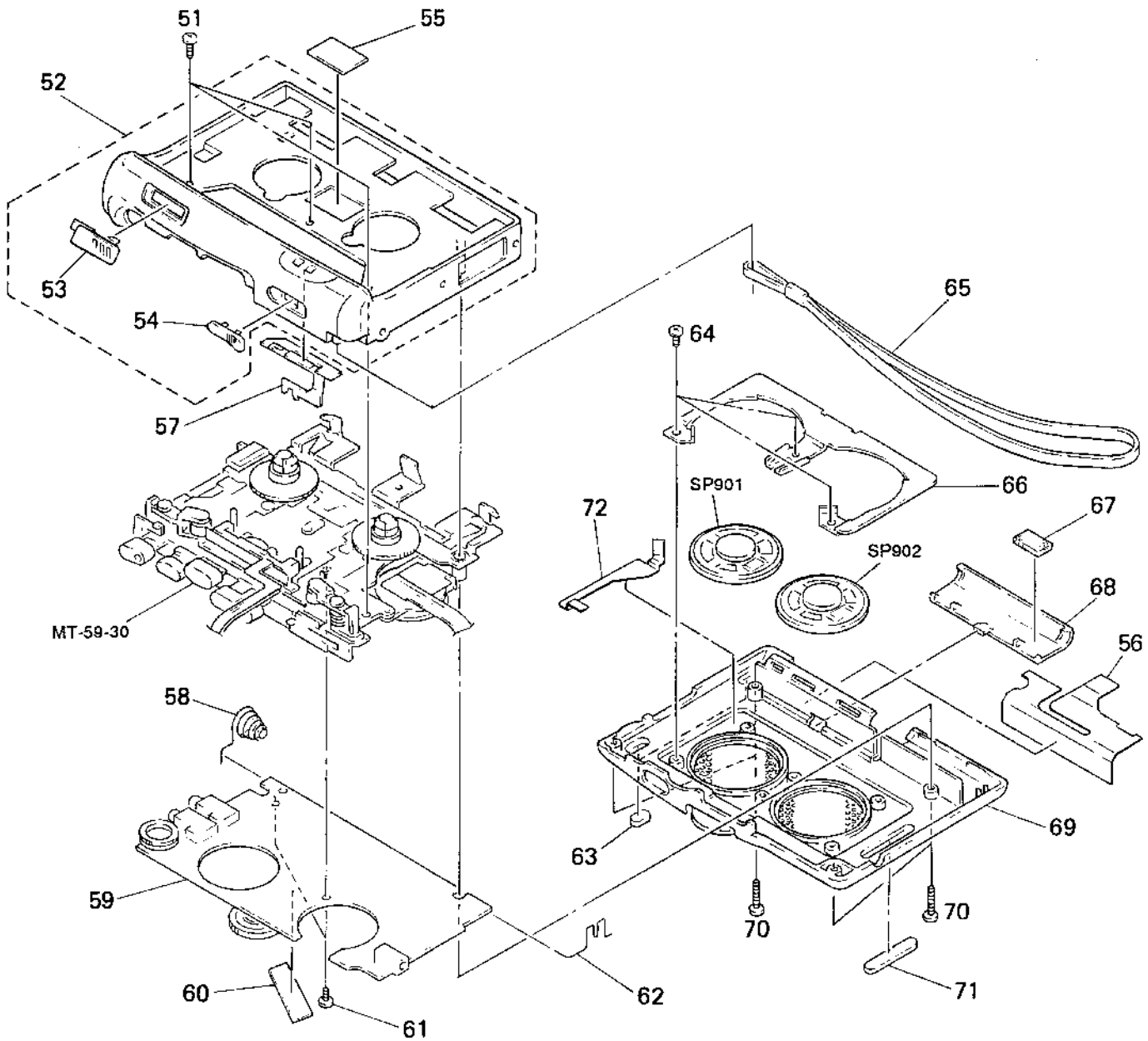
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

**(1) CHASSIS SECTION-1**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-3370-484-1	HOLDER ASSY, MICROPHONE		8	3-925-242-01	HOLDER, CASSETTE	
2	1-657-161-11	MIC FLEXIBLE BOARD		* 9	X-3370-480-1	TOGGLE ASSY	
* 3	3-925-243-01	CUSHION, MICROPHONE		10	3-311-772-11	SHAFT (A), STOPPER	
* 4	3-907-530-01	RETAINER, MICROPHONE		12	3 315 384 31	WASHER, STOPPER	
5	3 318 382 91	SCREW (1.7X2.5), TAPPING		13	3 315 989-11	SCREW, ORNAMENTAL	
* 6	1 657 163 11	LED BOARD		14	3-704-245-42	SCREW (P1.4X3.0)	
7	X-3370-489-1	LID ASSY, CASSETTE		MIC901	1-542-124-31	MICROPHONE, ELECTRET CONDENSER	

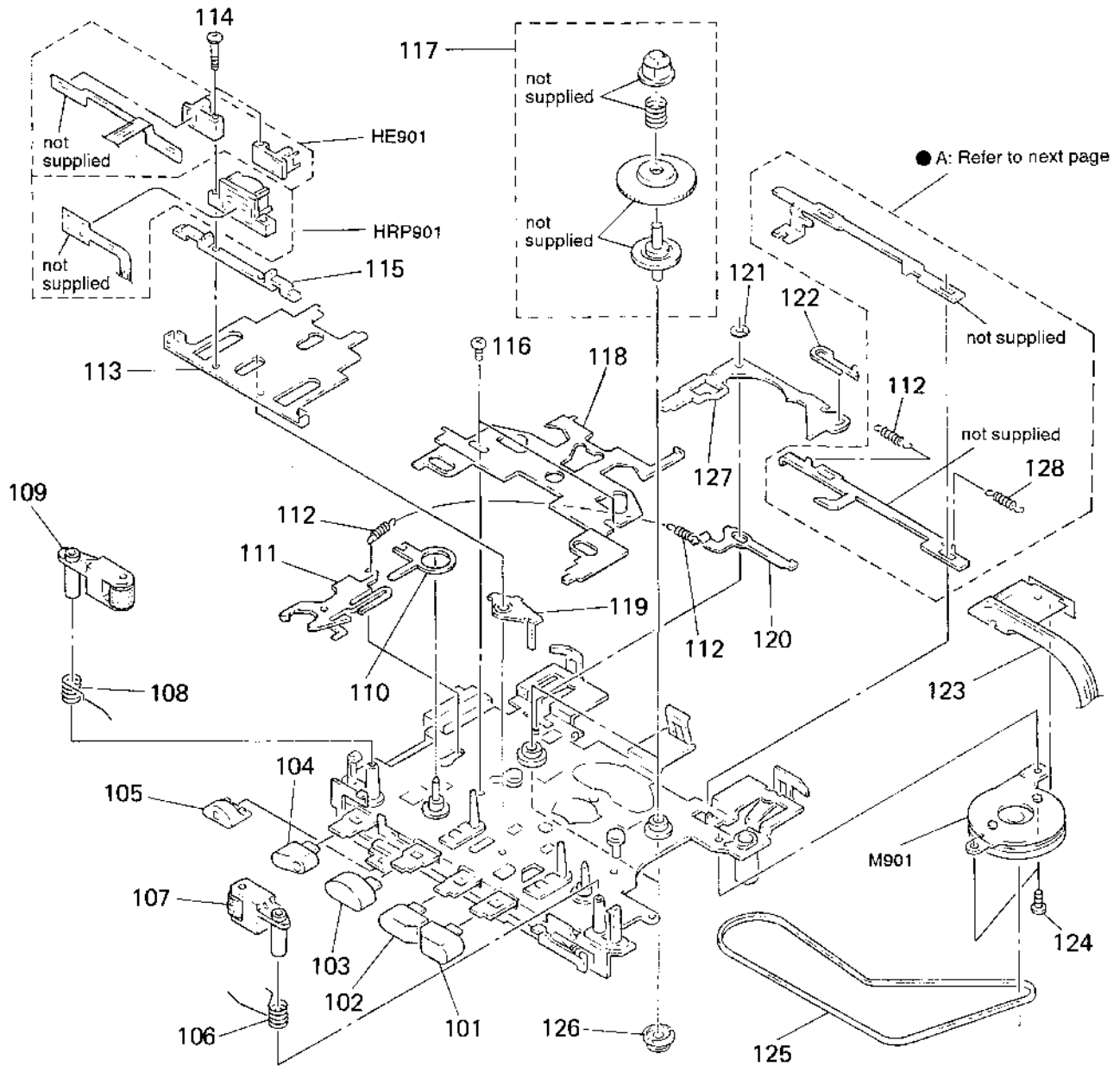
(2) CHASSIS SECTION-2



Ref. No.	Part No.	Description	Remark
51	3-704-197-32	SCREW (M1.4X3.0)	
52	X-3370-487-1	CABINET (FRONT) ASSY	
53	3-925-249-01	KNOB (PAUSE)	
54	3-925-250-01	KNOB, DIR	
55	3-925-231-01	REFLECTOR	
56	3-927-462-01	SHEET (PICK)	
* 57	X-3370-490-1	LEVER ASSY	
58	3-925-230-01	SPRING, BATTERY COIL	
* 59	A-3016-724-A	MAIN BOARD, COMPLETE	
60	4-017-441-01	CUSHION (B)	
61	3-345-648-01	SCREW (M1.4X3)	
62	3-925-229-01	TERMINAL, PLUS	

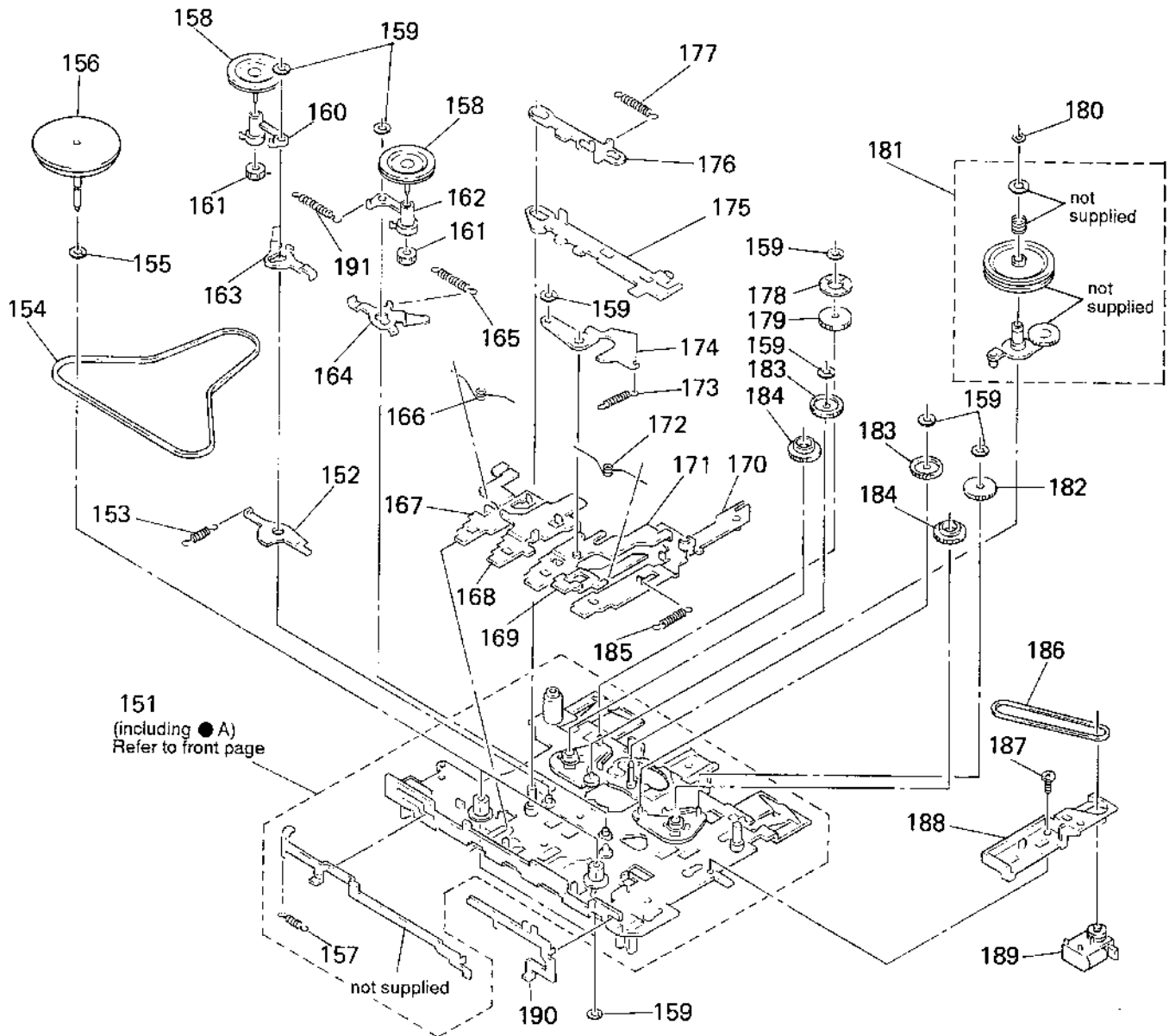
Ref. No.	Part No.	Description	Remark
63	3-925-234-01	FOOT (B), RUBBER	
64	3-318-382-31	SCREW (1.7X3), TAPPING	
65	3-328-319-01	STRAP, HAND	
* 66	3-926-270-01	BRACKET (SPK)	
67	9-911-815-01	CUSHION	
68	3-925-251-01	LID, BATTERY CASE	
69	X-3370-488-1	CABINET (REAR) ASSY	
70	3-318-203-92	SCREW (Ø1.7X9), TAPPING	
71	3-925-233-01	FOOT (A), RUBBER	
72	3-926-867-01	PAPER, SHIELD	
SP901	1-504-897-11	SPEAKER (3.6 CM)	
SP902	1-504-897-11	SPEAKER (3.6 CM)	

(3) MD SECTION-1  
(MT-59-30)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-925-247-01	BUTTON, FF		116	3-365-630-02	SCREW (M1.4)	
102	3-925-246-01	BUTTON, REW		117	X-3370-375-1	TABLE ASSY, REEL	
103	3-925-245-01	BUTTON, PLAY		* 118	3-924-535-01	LEVER (FR)	
104	3-925-244-01	BUTTON, REC		* 119	3-924-534-01	LEVER (C/R)	
105	3-925-248-01	BUTTON, STOP		* 120	3-924-538-01	LEVER (S-OFF)	
106	3-924-596-01	SPRING (PINCH-N), TORSION		121	3-321-483-11	RING, RETAINING	
107	X-3370-380-1	ARM (PINCH-R) ASSY		122	3-924-569-01	PAD (S-OFF)	
108	3-924-595-01	SPRING (PINCH-R), TORSION		123	1-657-172-11	MOTOR FLEXIBLE BOARD	
109	X-3370-379-1	ARM (PINCH-N) ASSY		124	3-704-245-42	SCREW (P1, 4X3.0)	
* 110	3-924-572-01	LEVER (DIR)		125	3-924-594-01	BELT (MOTOR)	
* 111	3-924-575-01	LEVER (DIR-M)		126	3-924-577-01	PULLEY (COUNTER)	
112	3-924-601-01	SPRING TENSION (N)		* 127	3-924-536-01	LEVER (OFF)	
113	X-3370-378-1	LEVER (HEAD) ASSY		128	3-924-602-01	SPRING TENSION (R)	
114	3-355-407-01	SCREW (M1.4), STEP		HE901	1-500-247-11	HEAD, MAGNETIC (ERASE)	
* 115	3-924-570-01	BRACKET (HEAD)		HRP901	1-500-246-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
				M901	1-698-581-11	MOTOR, DC (CAPSTAN/REEL)	

(4) MD SECTION-2  
(MT-59-30)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	X-3370-373-1	CHASSIS ASSY		* 171	3-924-565-01	LEVER (PLAY)	
* 152	3-924-537-01	LEVER (F/R)		172	3-924-598-01	SPRING (P/S), TORSION	
153	3-924-605-01	SPRING (FF), TENSION		173	3-924-604-01	SPRING (PLAY), TENSION	
154	3-924-593-01	BELT (FLYWHHEEL)		* 174	3-924-547-01	LEVER (PLAY-SUB)	
155	3-701-437-51	WASHER		* 175	3-924-545-01	LEVER (LOCK)	
156	X-3370-383-1	FLYWHEEL ASSY		* 176	3-924-546-01	LEVER (SW)	
157	3-924-602-01	SPRING TENSION (R)		177	3-924-606-01	SPRING (LOCK), TENSION	
158	3-924-558-01	PULLEY (T)		178	3-924-725-01	REFLECTOR	
159	3-321-483-11	RING, RETAINING		179	3-924-579-01	GEAR (REF)	
160	3-924-548-01	ARM (T-N)		180	3-348-993-01	WASHER	
161	3-924-557-01	GEAR (T)		181	X-3370-376-1	LEVER (CENTER) ASSY	
162	3-924-549-01	ARM (T-R)		182	3-924-556-01	GEAR (REW)	
* 163	3-924-539-01	LEVER (REW-F)		183	3-924-562-01	GEAR (FF)	
* 164	3-924-540-01	LEVER (REW-R)		184	3-924-560-01	GEAR (REEL)	
165	3-924-603-01	SPRING (F/R), TENSION		185	3-924-600-01	SPRING (REC), TENSION	
166	3-924-597-01	SPRING (F/R), TORSION		186	3-907-946-01	BELT (COUNTER)	
* 167	3-924-568-01	LEVER (FF)		187	3-704-245-42	SCREW (P1.4X3.0)	
* 168	3-924-567-01	LEVER (REW)		* 188	3-924-664-01	BRACKET (COUNTER)	
* 169	3-924-566-01	LEVER (STOP)		189	1-548-582-11	COUNTER, TAPE (SMALL TYPE)	
* 170	X-3370-377-1	LEVER (REC) ASSY		* 190	3-924-574-01	LEVER (PAUSE)	
				191	3-924-607-01	SPRING (ARM-T), TENSION	

# SECTION 8 ELECTRICAL PARTS LIST

LED

MAIN

**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:  $\mu$ , for example:  
uA.:  $\mu A.$  uPA.:  $\mu PA.$   
uPB.:  $\mu PB.$  uPC.:  $\mu PC.$  uPD.:  $\mu PD.$
- CAPACITORS  
uF:  $\mu F$
- COILS  
uH:  $\mu H$

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-857-163 11	LED BOARD *****		C125	1-163-038-00	CERAMIC CHIP 0.1uF	25V
		< DIODE >		C126	1-164-360-11	CERAMIC CHIP 0.1uF	16V
D901	8-719-049-23	DIODE BR1101W (REC/BATT ●)		C127	1-164-360-11	CERAMIC CHIP 0.1uF	16V
D902	8-719-049-23	DIODE BR1101W (BATT ●●)		C128	1-135-201-11	TANTALUM CHIP 10uF	20% 4V
D903	8-719-049-23	DIODE BR1101W (BATT ●●●)		C129	1-164-360-11	CERAMIC CHIP 0.1uF	16V
		< SWITCH >		C130	1-126-246-11	ELECT CHIP 220uF	20% 4V
S102	1-572-922-11	SWITCH, SLIDE (MIC SENS)		C131	1-104-847-11	TANTAL. CHIP 22uF	20% 4V
S501	1-572-922-11	SWITCH, SLIDE (VOR)		C132	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
*****				C133	1-164-346-11	CERAMIC CHIP 1uF	16V
*	A 3016-724-A	MAIN BOARD, COMPLETE *****		C134	1-135-201-11	TANTALUM CHIP 10uF	20% 4V
		< CAPACITOR >		C135	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C101	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C136	1-163-014-00	CERAMIC CHIP 0.0027uF	5% 50V
C102	1-164-360-11	CERAMIC CHIP 0.1uF	16V	C137	1-126-607-11	ELECT CHIP 47uF	20% 4V
C103	1-164-360-11	CERAMIC CHIP 0.1uF	16V	C138	1-164-245-11	CERAMIC CHIP 0.015uF	10% 25V
C104	1-163-077-00	CERAMIC CHIP 0.1uF	10% 25V	C139	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C105	1-135-201-11	TANTALUM CHIP 10uF	20% 4V	C140	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C106	1-162-968-11	CERAMIC CHIP 0.0047uF	10% 50V	C141	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C107	1-107-493-11	TANTAL. CHIP 47uF	20% 2.5V	C142	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C108	1-135-201-11	TANTALUM CHIP 10uF	20% 4V	C143	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C109	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V	C144	1-164-360-11	CERAMIC CHIP 0.1uF	10% 16V
C110	1-164-360-11	CERAMIC CHIP 0.1uF	16V	C501	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C111	1-162-968-11	CERAMIC CHIP 0.0047uF	10% 50V	C502	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C112	1-107-493-11	TANTAL. CHIP 47uF	20% 2.5V	C503	1-104-847-11	TANTAL. CHIP 22uF	20% 4V
C113	1-104-847-11	TANTAL. CHIP 22uF	20% 4V	C504	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V
C114	1-104-847-11	TANTAL. CHIP 22uF	20% 4V	C602	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
C115	1-164-346-11	CERAMIC CHIP 1uF	16V	C603	1-164-489-11	CERAMIC CHIP 0.22uF	10% 16V
C116	1-104-847-11	TANTAL. CHIP 22uF	20% 4V	C604	1-135-073-00	TANTALUM CHIP 0.33uF	10% 35V
C117	1-162-966-11	CERAMIC CHIP 0.0022uF	10% 50V	C605	1-107-823-11	CERAMIC CHIP 0.47uF	10% 16V
C118	1-164-005-11	CERAMIC CHIP 0.47uF	25V	C701	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C119	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V	C702	1-135-145-11	TANTALUM CHIP 0.47uF	20% 35V
C120	1-135-201-11	TANTALUM CHIP 10uF	20% 4V	C703	1-124-779-00	ELECT CHIP 10uF	20% 16V
C122	1-126-207-11	ELECT CHIP 33uF	20% 4V	C704	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C123	1-135-070-00	TANTALUM CHIP 0.1uF	10% 35V	C705	1-135-091-00	TANTAL. CHIP 1uF	20% 16V
C124	1-135-201-11	TANTALUM CHIP 10uF	20% 4V	C706	1-164-360-11	CERAMIC CHIP 0.1uF	16V
				C708	1-164-360-11	CERAMIC CHIP 0.1uF	16V
						< CONNECTOR >	
				CN101	1-580-372-41	JACK, DC (POLARITY UNIFIED TYPE) (DC IN 3V)	

# MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< DIODE >							
D701	8-719-988-62	DIODE 1SS355		R107	1-216-833-11	METAL CHIP 10K 5% 1/16W	
< IC >							
IC101	8-752-036 38 IC	CXA1347N		R108	1-216-820-11	METAL CHIP 820 5% 1/16W	
IC501	8-759-701-51 IC	NJM2072M		R109	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
IC601	8-759-275-47 IC	LB1674V-TLM		R110	1-216-845-11	METAL CHIP 100K 5% 1/16W	
IC701	8-759-344-30 IC	TB2004FN-016-ER					
IC702	8-759-190-80 IC	S-81211PG-PA-TI		R111	1-216-815-11	METAL CHIP 330 5% 1/16W	
< JACK >							
J101	1-563-319-21	JACK (MIC (PLUG IN POWER))		R112	1-216-813-11	METAL CHIP 220 5% 1/16W	
J102	1-563-319-21	JACK (EAR)		R113	1-216-821-11	METAL CHIP 1K 5% 1/16W	
< JUMPER RESISTOR >							
JC1	1-216-864-11	METAL CHIP 0 5% 1/16W		R114	1-216-833-11	METAL CHIP 10K 5% 1/16W	
< PHOTO REFLECTOR >							
PH701	8-749-925-05	REFLECTOR NJL5183KA-F20-TE1		R115	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
< TRANSISTOR >							
Q101	8-729-230-63	TRANSISTOR 2SC4116-YG		R116	1-216-801-11	METAL CHIP 22 5% 1/16W	
Q102	8-729-402-96	TRANSISTOR UN5114		R117	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
Q103	8-729-230-63	TRANSISTOR 2SC4116-YG		R118	1-216-845-11	METAL CHIP 100K 5% 1/16W	
Q501	8-729-230-63	TRANSISTOR 2SC4116-YG		R119	1-216-792-11	METAL GLAZE 3.9 5% 1/16W	
Q601	8-729-402-96	TRANSISTOR UN5114		R120	1-216-792-11	METAL GLAZE 3.9 5% 1/16W	
Q602	8-729-402-93	TRANSISTOR UN5214-TX					
Q603	8-729-823-86	TRANSISTOR 2SA1745		R121	1-216-835-11	METAL CHIP 15K 5% 1/16W	
Q604	8-729-823-86	TRANSISTOR 2SA1745		R122	1-216-845-11	METAL CHIP 100K 5% 1/16W	
Q701	8-729-230-63	TRANSISTOR 2SC4116-YG		R123	1-216-814-11	METAL CHIP 270 5% 1/16W	
Q702	8-729-402-93	TRANSISTOR UN5214-TX		R124	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
Q703	8-729-402-93	TRANSISTOR UN5214-TX		R125	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
Q704	8-729-402-96	TRANSISTOR UN5114					
Q705	8-729-402-96	TRANSISTOR UN5114		R126	1-216-798-11	METAL GLAZE 12 5% 1/16W	
Q706	8-729-420-24	TRANSISTOR 2SB1218A-QRS		R127	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
Q707	8-729-402-93	TRANSISTOR UN5214-TX		R128	1-216-814-11	METAL CHIP 270 5% 1/16W	
Q708	8-729-230-63	TRANSISTOR 2SC4116-YG		R129	1-216-811-11	METAL CHIP 150 5% 1/16W	
Q709	8-729-230-63	TRANSISTOR 2SC4116-YG		R130	1-216-819-11	METAL CHIP 680 5% 1/16W	
Q710	8-729-402-96	TRANSISTOR UN5114					
< RESISTOR >							
R101	1-216-821-11	METAL CHIP 1K 5% 1/16W		R131	1-216-814-11	METAL CHIP 270 5% 1/16W	
R102	1-216-830-11	METAL CHIP 5.6K 5% 1/16W		R132	1-216-807-11	METAL CHIP 68 5% 1/16W	
R103	1-216-821-11	METAL CHIP 1K 5% 1/16W		R133	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R104	1-216-815-11	METAL CHIP 330 5% 1/16W		R134	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R105	1-216-817-11	METAL CHIP 470 5% 1/16W		R501	1-216-809-11	METAL CHIP 100 5% 1/16W	
R106	1-216-851-11	METAL CHIP 330K 5% 1/16W					
				R502	1-216-845-11	METAL CHIP 100K 5% 1/16W	
				R503	1-216-833-11	METAL CHIP 10K 5% 1/16W	
				R504	1-216-809-11	METAL CHIP 100 5% 1/16W	
				R505	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
				R601	1-216-821-11	METAL CHIP 1K 5% 1/16W	
				R602	1-216-833-11	METAL CHIP 10K 5% 1/16W	
				R603	1-216-841-11	METAL CHIP 47K 5% 1/16W	
				R604	1-216-813-11	METAL CHIP 220 5% 1/16W	
				R605	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
				R608	1-216-809-11	METAL CHIP 100 5% 1/16W	
				R609	1-216-809-11	METAL CHIP 100 5% 1/16W	
				R701	1-216-295-11	METAL GLAZE 43K 5% 1/16W	
				R702	1-216-833-11	METAL CHIP 10K 5% 1/16W	
				R703	1-216-841-11	METAL CHIP 47K 5% 1/16W	
				R704	1-216-810-11	METAL CHIP 120 5% 1/16W	
				R705	1-216-833-11	METAL CHIP 10K 5% 1/16W	
				R706	1-216-833-11	METAL CHIP 10K 5% 1/16W	
				R707	1-216-833-11	METAL CHIP 10K 5% 1/16W	
				R708	1-216-833-11	METAL CHIP 10K 5% 1/16W	
				R709	1-216-841-11	METAL CHIP 47K 5% 1/16W	

Ref. No.	Part No.	Description	Remark
R710	1-216-833-11	METAL CHIP 10K 5% 1/16W	
< VARIABLE RESISTOR >			
RV101	1-223-510-11	RES. VAR, CARBON 10K/10K (VOL)	
RV601	1-223-586-11	RES. ADJ, CARBON 10K	
RV602	1-223-931-11	RES. VAR, CARBON 10K (SPEED CONTROL)	
< SWITCH >			
S101	1-762-081-11	SWITCH, SLIDE (PLAY/REC)	
S103	1-762-081-11	SWITCH, SLIDE (FWD/REV)	
S104	1-572-288-11	SWITCH, PUSH (POWER)	
S701	1-572-922-11	SWITCH, SLIDE (PAUSE)	
S702	1-572-688-11	SWITCH, PUSH (FWD FIELD BACK)	
S703	1-572-288-11	SWITCH, PUSH (DIR)	
S704	1-572-288-11	SWITCH, PUSH (FF/REW)	
< TRANSFORMER >			
T101	1-433-286-11	TRANSFORMER, BIAS OSCILLATION	
T701	1-450-667-11	TRANSFORMER, DC-DC CONVERTER	
< THERMISTOR >			
THP601	1-810-911-21	THERMISTOR, POSITIVE	
< CONNECTOR >			
W101	1-764-768-11	CONNECTOR, FPC (ZIF) 12P	
*****			
MISCELLANEOUS			
*****			
2	1-657-161-11	MIC FLEXIBLE BOARD	
123	1-657-172-11	MOTOR FLEXIBLE BOARD	
189	1-548-582-11	COUNTER, TAPE (SMALL TYPE)	
HE901	1-500-247-11	HEAD, MAGNETIC (ERASE)	
HRP901	1-500-246-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
M901	1-698-581-11	MOTOR, DC (CAPSTAN/REEL)	
MIC901	1-542-124-31	MICROPHONE, ELECTRET CONDENSER	
SP901	1-504-897-11	SPEAKER (3.6 CM)	
SP902	1-504-897-11	SPEAKER (3.6 CM)	
*****			
ACCESSORIES & PACKING MATERIALS			
*****			
3	800-053-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (Canadian, AEP, UK, E)	
3	800-053-21	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP, UK)	
3	800-053-31	MANUAL, INSTRUCTION (ENGLISH) (US)	
3	800-053-41	MANUAL, INSTRUCTION (KOREAN) (E)	

Ref. No.	Part No.	Description	Remark
	3-925-233-01	FOOT (A), RUBBER	
*	3-925-593-01	INDIVIDUAL CARTON (Canadian, AEP, UK, E)	
*****			

