

# TCM-AP5V

## SERVICE MANUAL

*US Model  
Canadian Model  
AEP Model  
E Model*



Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MT-AP5-118

### SPECIFICATIONS

**Recording system**

2 - track 1 channel monaural

**Frequency range**

250 - 6,300 Hz

**Speaker**

Approx. 3.6 cm (1 7/16 in.) dia.

**Power output**

150mW (at 10% harmonic distortion)

**Input**

Microphone input jack (minijack) sensitivity 0.2 mV for 3 kilohms or lower impedance microphone

**Output**

Earphone jack (minijack) for 10 kilohms or lower impedance earphone

**Variable range of the tape speed**

from +100% to -50%

**Power requirements**

3V DC

Two size AA (R6) batteries

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

Approx. 90.9 x 113.0 x 37.8 mm  
(3 5/8 x 4 1/2 x 1 1/2 in.)

**Mass**

Approx. 205 g (7.3 oz.) not incl. batteries

Approx. 275 g (9.8 oz.) incl. batteries and cassette

Design and specifications are subject to change without notice.

**CASSETTE-CORDER**

**SONY®**



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### 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.

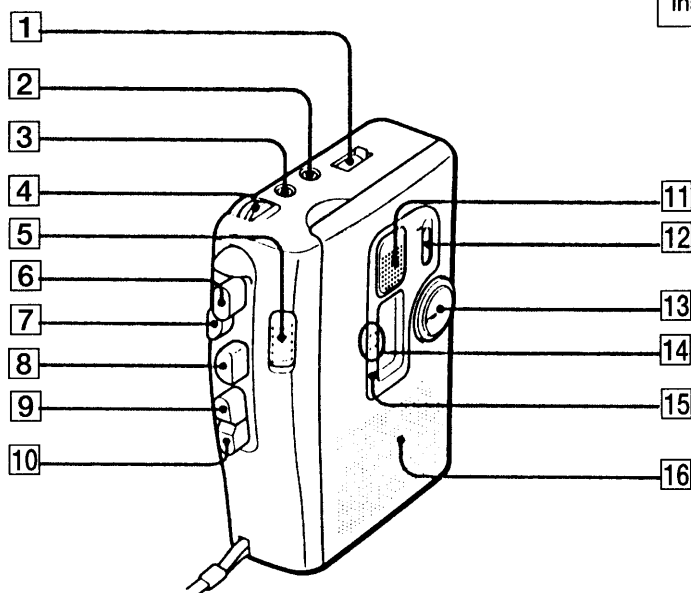
### Notes on chip component replacement

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

## SECTION 1 GENERAL

### LOCATION AND FUNCTION OF CONTROLS

This section is extracted from instruction manual.



- |   |                 |
|---|-----------------|
| 1 | TAPE counter    |
| 2 | EARPHONE jack   |
| 3 | MICROPHONE jack |
| 4 | VOLUME knob     |
| 5 | PAUSE button    |
| 6 | ● REC button    |
| 7 | ■ STOP button   |
| 8 | ▶ PLAY button   |

- |    |                          |
|----|--------------------------|
| 9  | ◀◀ REW/REVIEW button     |
| 10 | ▶▶ FF/CUE button         |
| 11 | FLAT MICROPHONE          |
| 12 | VOR switch               |
| 13 | SPEED/PITCH CONTROL knob |
| 14 | BATT/REC lamp            |
| 15 | BATT CHANGE lamp         |
| 16 | SPEAKER                  |

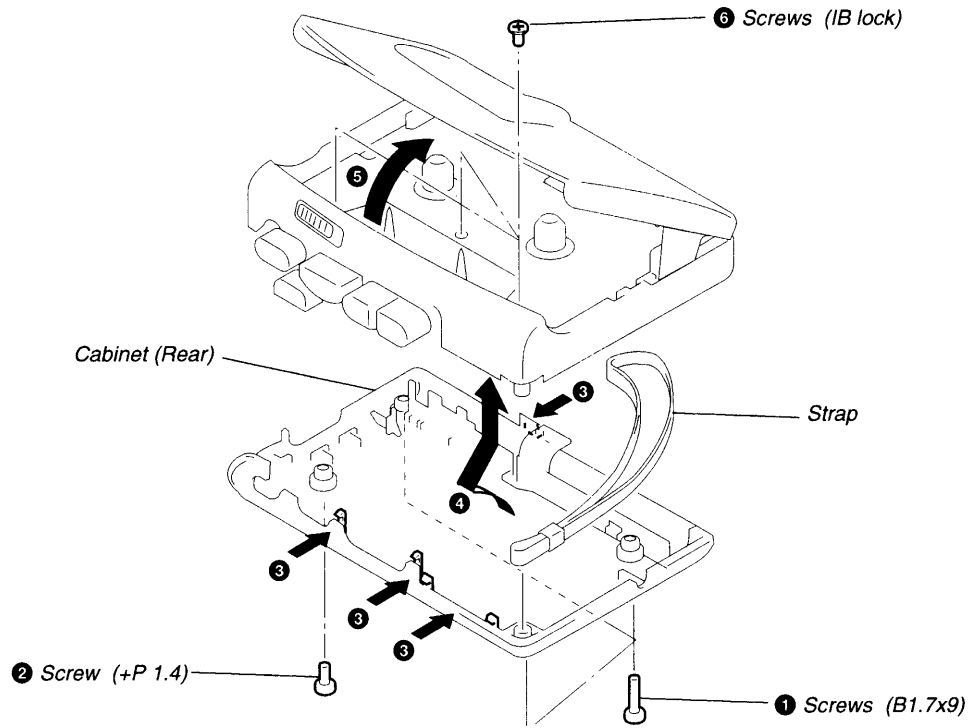
## SECTION 2 DISASSEMBLY

- The equipment can be removed using the following procedure.

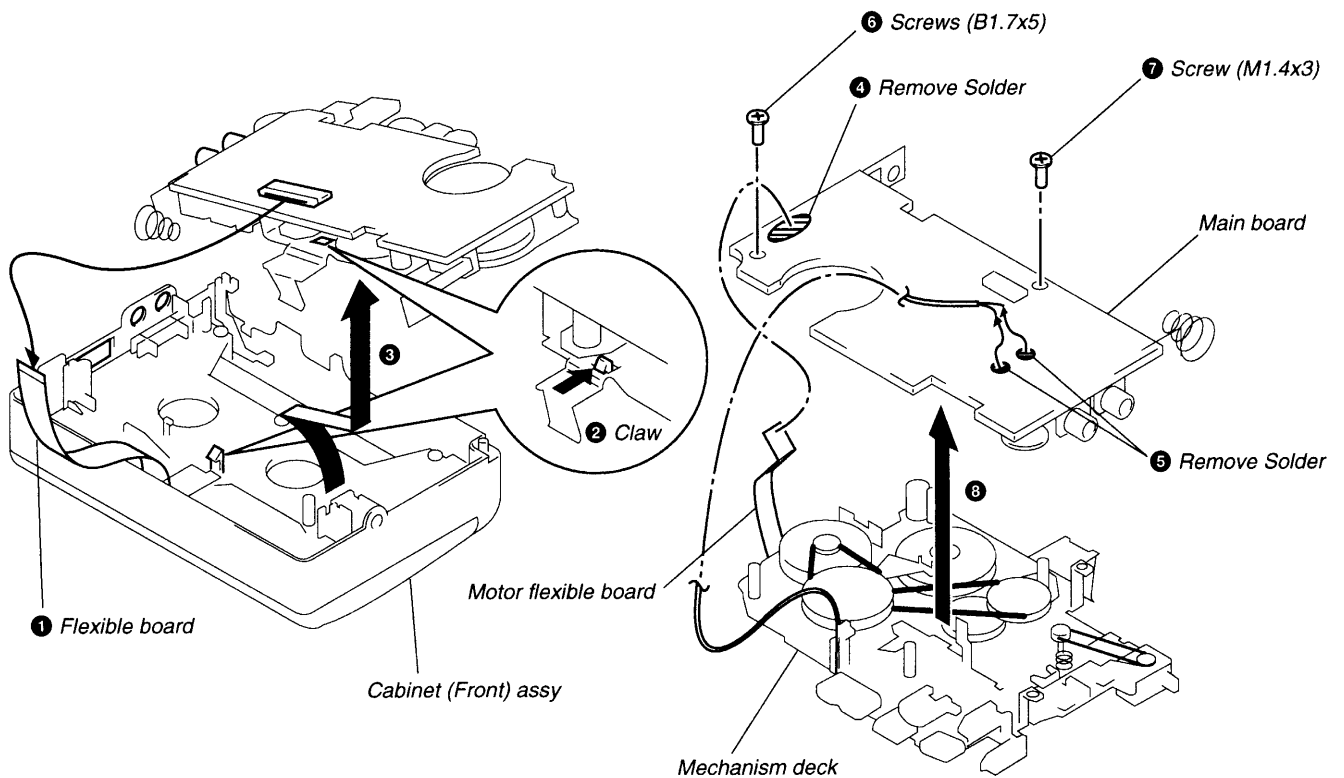
Set → Cabinet (Rear) → Main board, Mechanism deck → Lid, Cassette assy → LED board

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

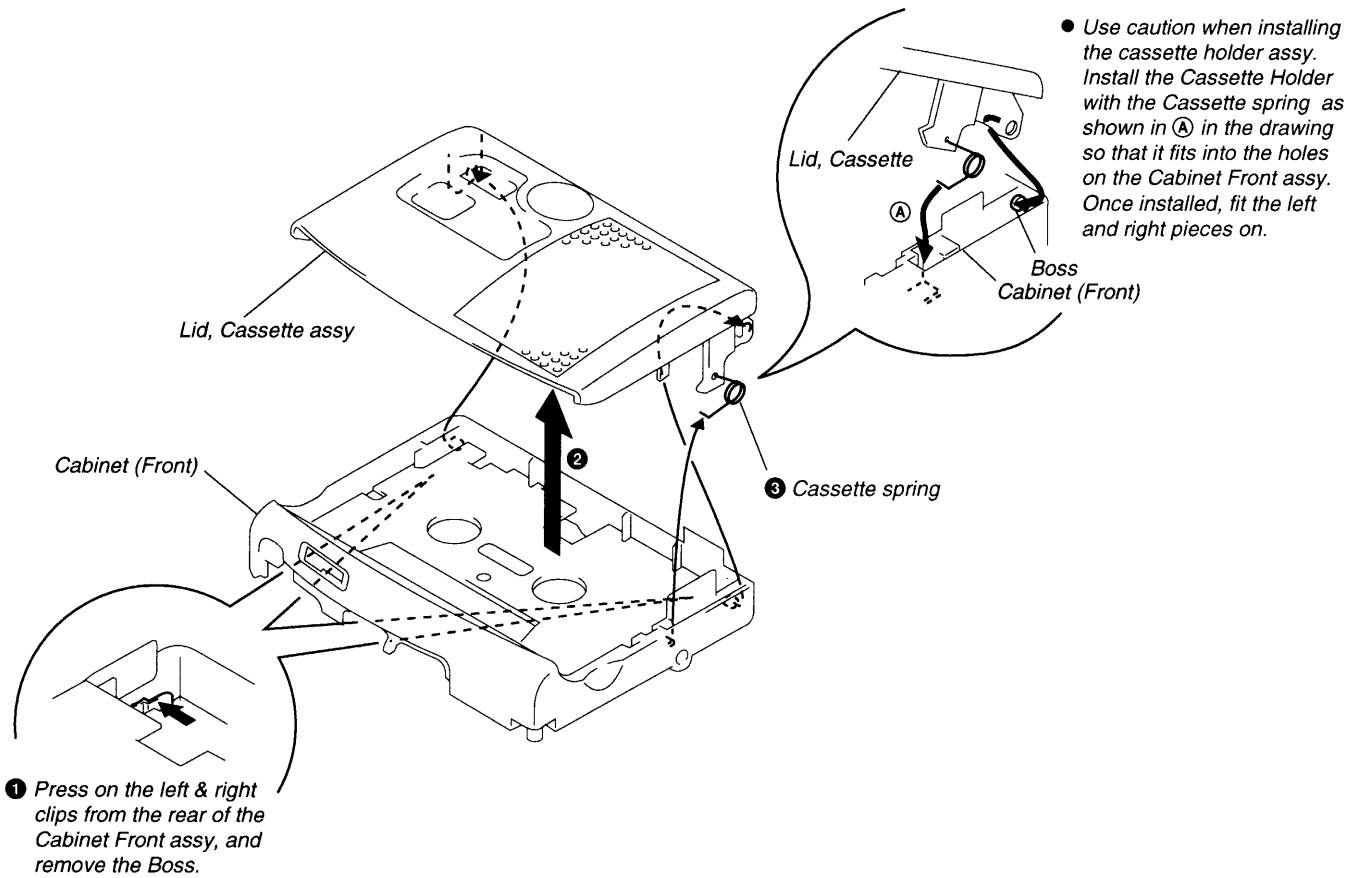
### 2-1. CABINET (REAR) REMOVAL



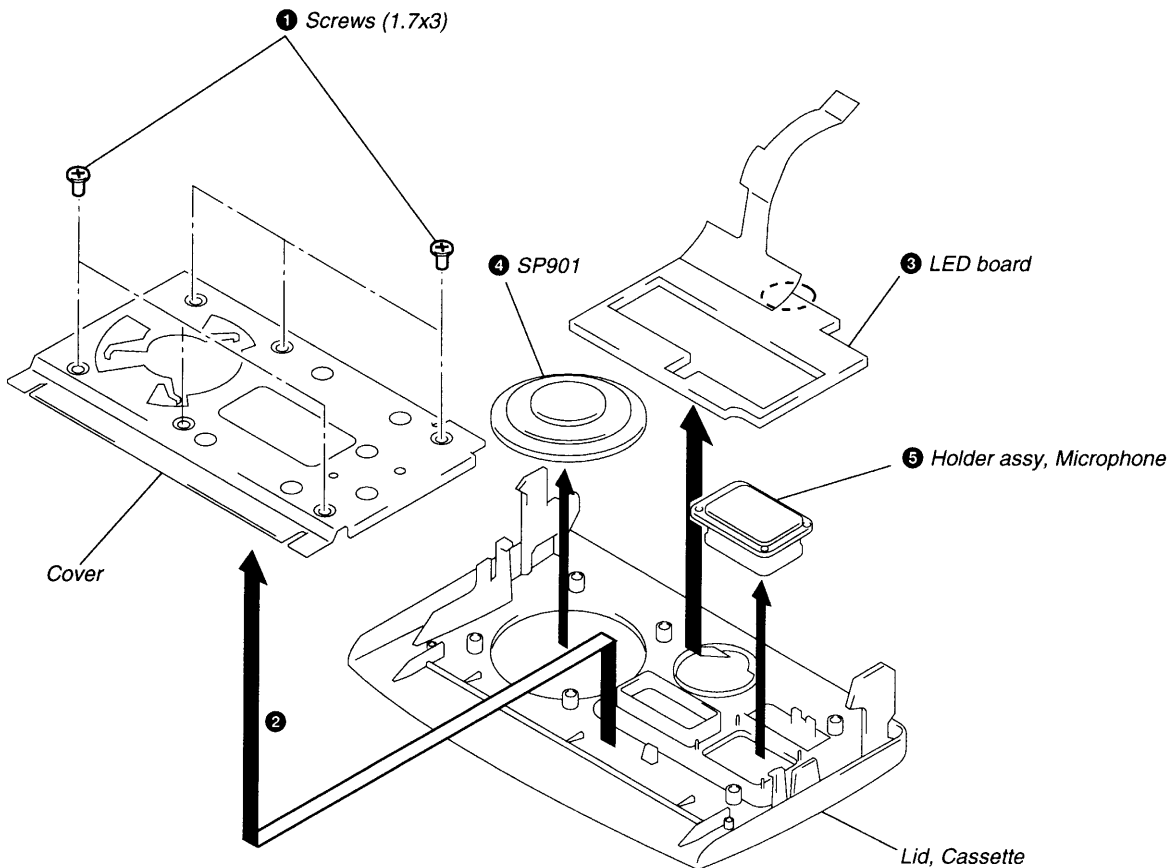
### 2-2. MAIN BOARD, MECHANISM DECK REMOVAL



### 2-3. LID, CASSETTE ASSY REMOVAL



### 2-4. LED BOARD, SP901, HOLDER ASSY, MICROPHONE REMOVAL



## SECTION 3 ADJUSTMENTS

### 3-1. MECHANICAL ADJUSTMENTS

#### PRECAUTION

- Clean the following parts with a denatured alcohol-moistened swab :
  - record/playback head    pinch roller
  - erase head                rubber belts
  - capstan
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.
- Power supply voltage : 3V DC.

#### Torque Measurement

Mode	Torque Meter	Meter Reading
Forward	CQ-102C	22 – 42 g • cm (0.31 – 0.58 oz • inch)
Forward Back Tension	CQ-102C	1.0 – 4.5 g • cm (0.014 – 0.062 oz • inch)
Fast Forward and Rewind	CQ-201B	more than 50 g • cm (0.7 oz • inch)

#### Tape Tension Measurement

Mode	Tension Meter	Meter Reading
Forward	CQ-403A	more than 50g ( 1.77oz)
Reverse	CQ-403B	

### 3-2. ELECTRICAL ADJUSTMENTS

#### ● Standard Level

Input signal level	MIC	- 60dBs
Output signal level	EAR (EARPHONE)	10kΩ, -10dBs

#### ● Test Tape

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

#### Setting :

VOL Control (RV101) : mechanical mid  
 PAUSE (S502) : OFF  
 VOR (S501) : OFF  
 SPEED/PITCH CONTROL (RV401) : normal (center click)

#### PRECAUTION

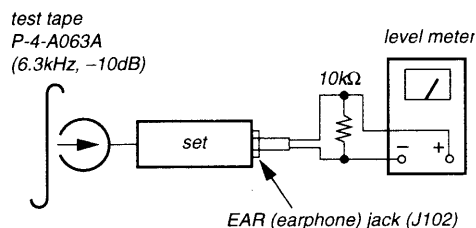
#### Record/Playback Head Azimuth Adjustment

Switch position

VOL : Mechanical center  
 TAPE SPEED switch : 2.4 cm/s  
 VOR switch : OFF

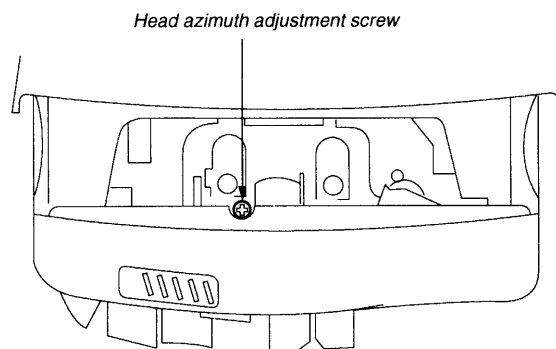
#### Procedure :

– Mode : play back –



- Rotate the screw to adjust level meter reading to the maximum.  
**Note :** Adjust to the maximum peak though there may be two or three peaks

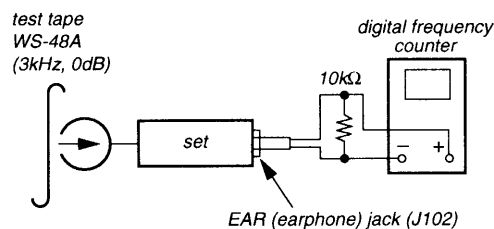
Adjustment Location :



#### Tape speed adjustment

##### Procedure :

- Short circuit between TAP F terminal on the main board.
- Mode : playback



- Turn the speed/pitch control volume knob (RV401) fully in clockwise (fast) direction.
- Adjust RV603 so that the reading of the frequency counter becomes  $6000 \pm 120\text{Hz}$ .
- Turn the speed/pitch control volume knob (RV401) fully in anti-clockwise (slow) direction.
- Adjust RV604 so that the reading of the frequency counter becomes  $1500 \pm 30\text{Hz}$ .
- Turn the speed/pitch control volume knob (RV401) to the center (normal) position.
- Adjust RV602 so that the reading of the frequency counter becomes  $3000 \pm 30\text{Hz}$ .
- Open the short circuit to release TAP F terminal.

**Adjustment Location :** Main board (See page 6)

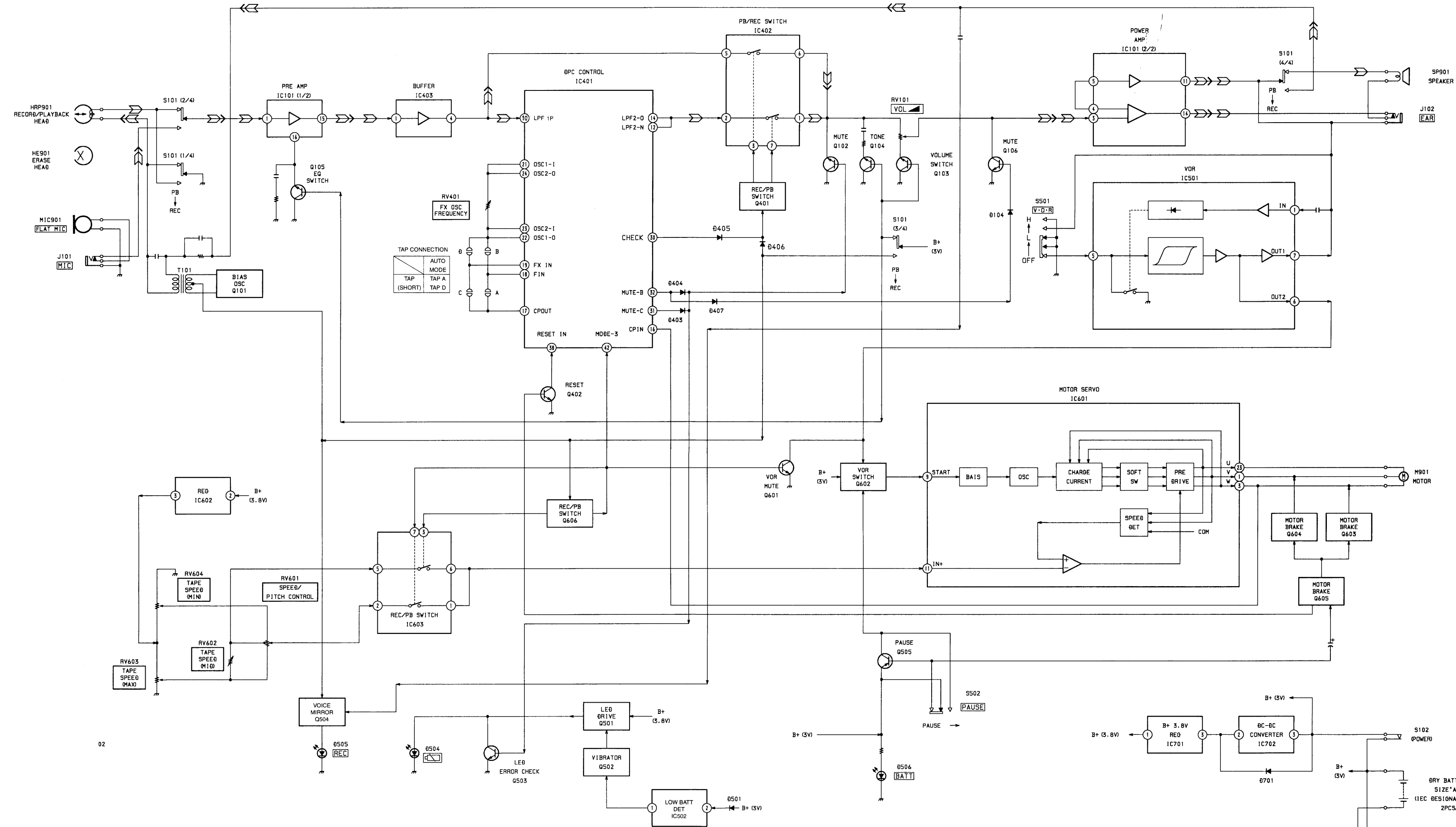
**Setting :**



- Adjustment Location :** Main board (B side)

## SECTION 4

### DIAGRAMS

#### 4-1. BLOCK DIAGRAM



- Signal path.  
 : PB  
 : REC

● SEMICONDUCTOR LOCATION

Ref. No.	Location
D101	B-11
D102	G-9
D103	G-5
D104	G-4
D401	E-9
D402	E-10
D403	E-11
D404	E-11
D405	F-2
D406	E-2
D407	E-11
D501	E-4
D504	C-15
D505	C-15
D506	C-16
D701	C-8
IC101	H-8
IC401	E-10
IC402	G-3
IC403	G-3
IC501	G-8
IC502	E-4
IC601	B-10
IC602	C-10
IC603	C-11
IC701	D-9
IC702	B-8
Q101	H-10
Q102	I-7
Q103	I-8
Q104	I-8
Q105	H-4
Q106	G-5
Q401	F-3
Q402	E-3
Q501	E-9
Q502	E-8
Q503	E-2
Q504	E-5
Q505	E-5
Q601	C-10
Q602	C-10
Q603	C-9
Q604	B-9
Q605	C-4
Q606	C-2

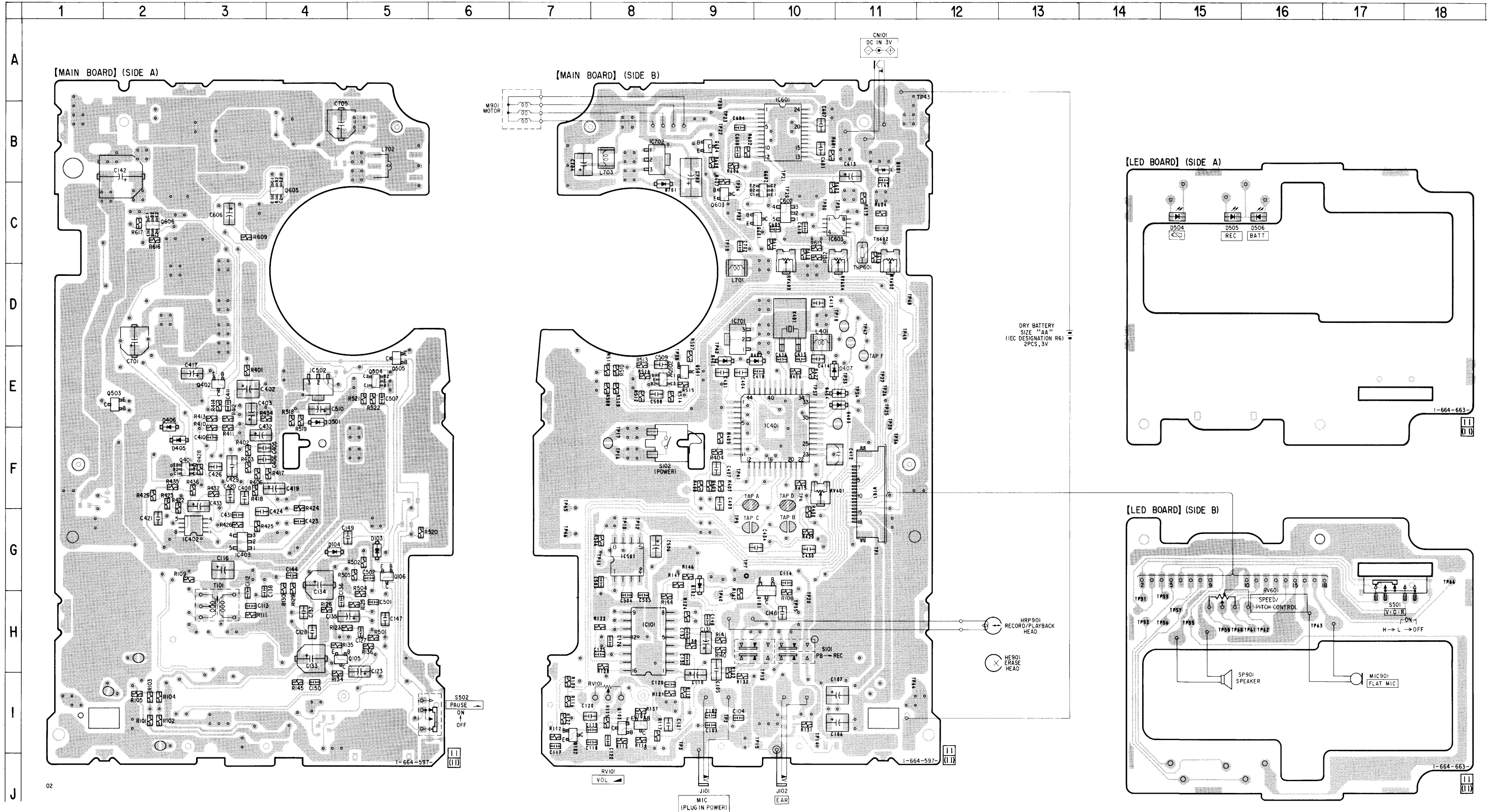
**Note:**

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

**Caution :**

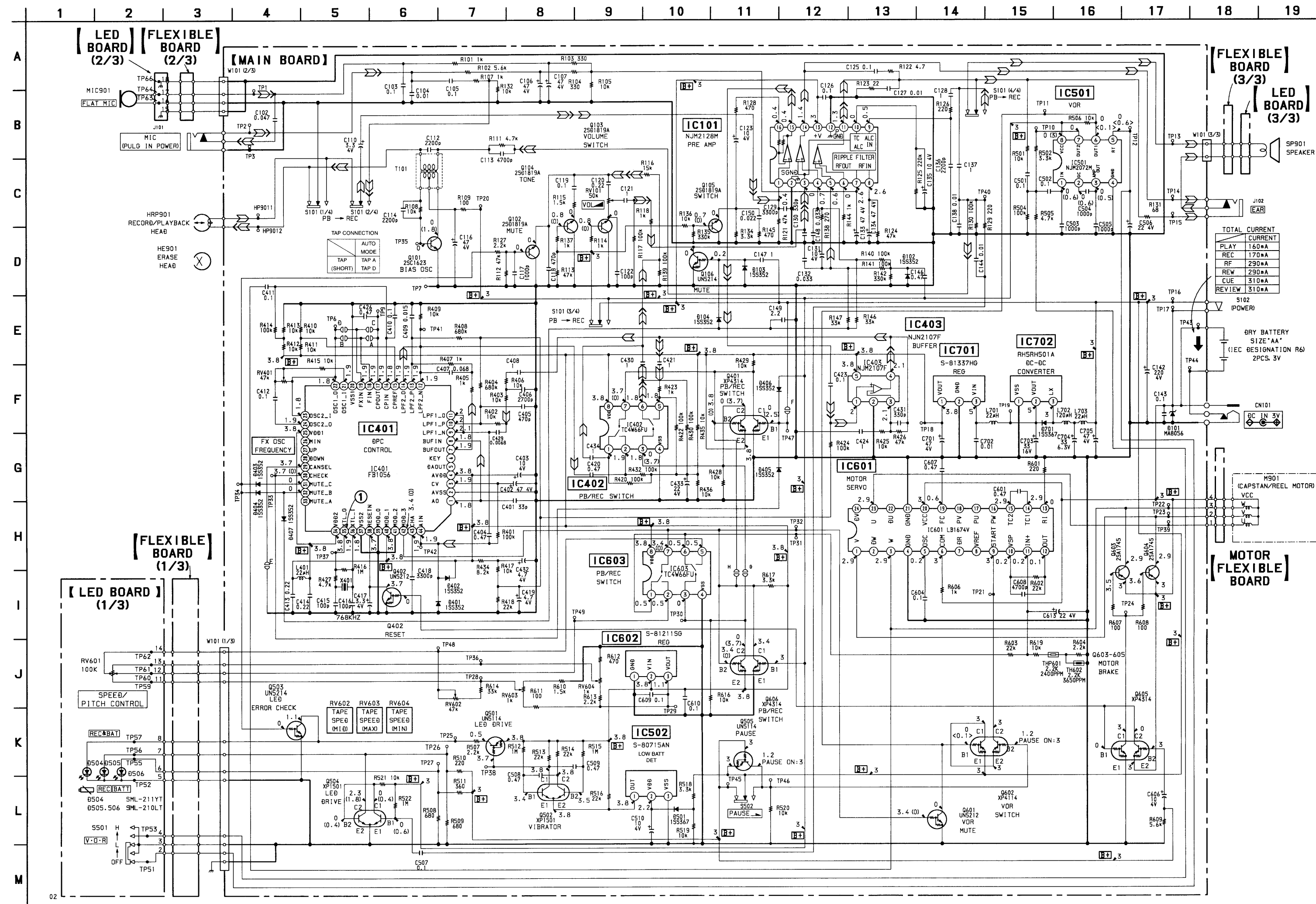
Pattern face side : Parts on the pattern face side seen from  
(Conductor Side) the pattern face are indicated.  
Parts face side : Parts on the parts face side seen from the  
(Component side) parts face are indicated.

4-2. PRINTED WIRING BOARDS



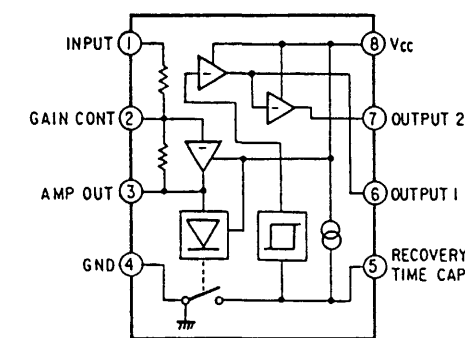


## 4-3. SCHEMATIC DIAGRAM

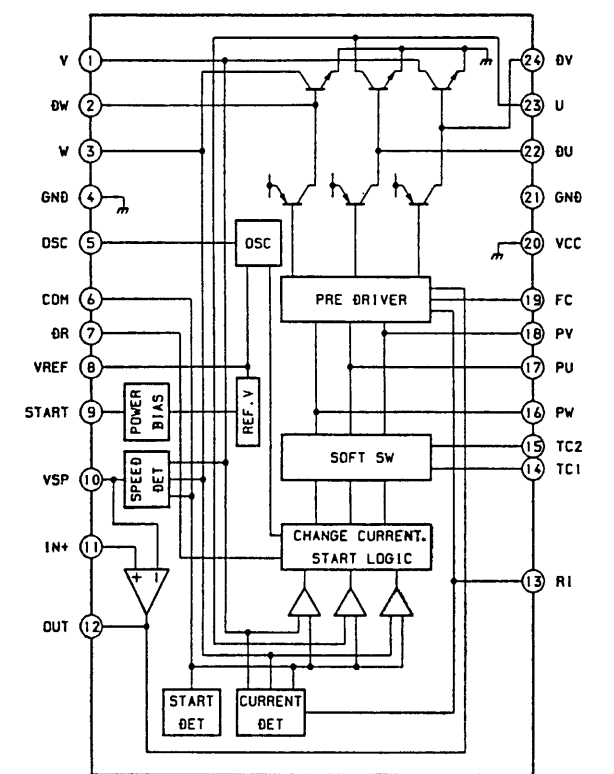


## ● IC BLOCK DIAGRAMS

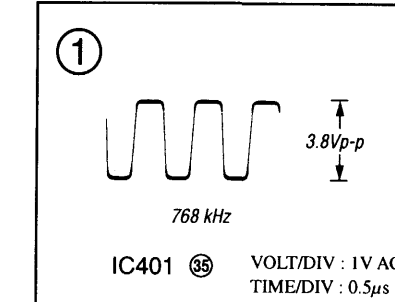
## IC501 NJM2072M



## IC601 LB1674V-TLM



## ● WAVEFORM

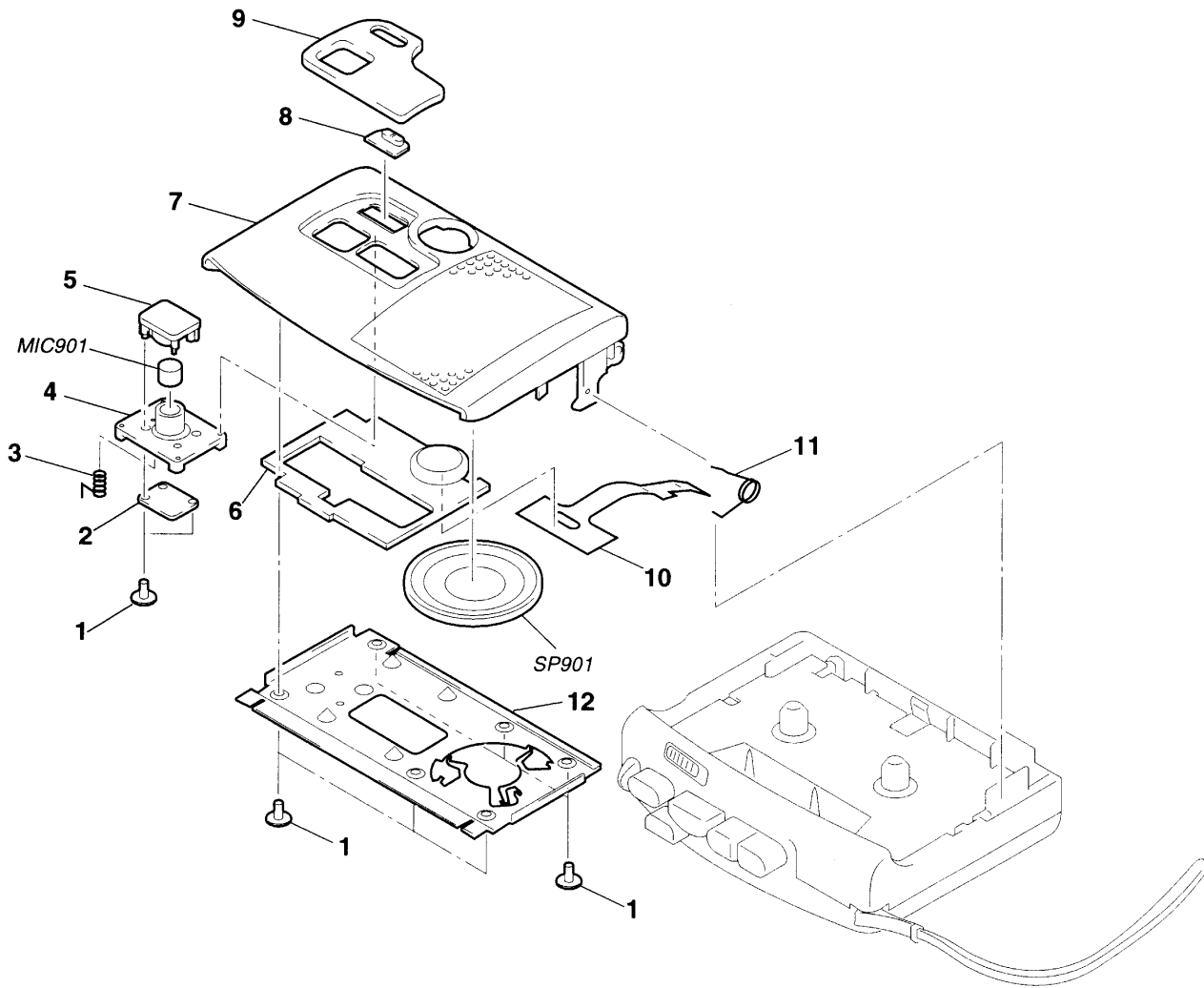
**Note :**

- All capacitors are in μF unless otherwise noted. pF: pμF
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- [B+]: B+ Line
- [ ]: adjustment for repair.
- Power voltage is dc 3V 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 : PLAY
- ( ) : REC
- Voltages are taken with a VOM ( Input impedance 10M ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- ∞ : PB
- ∞∞ : REC

SECTION 5  
EXPLODED VIEWS

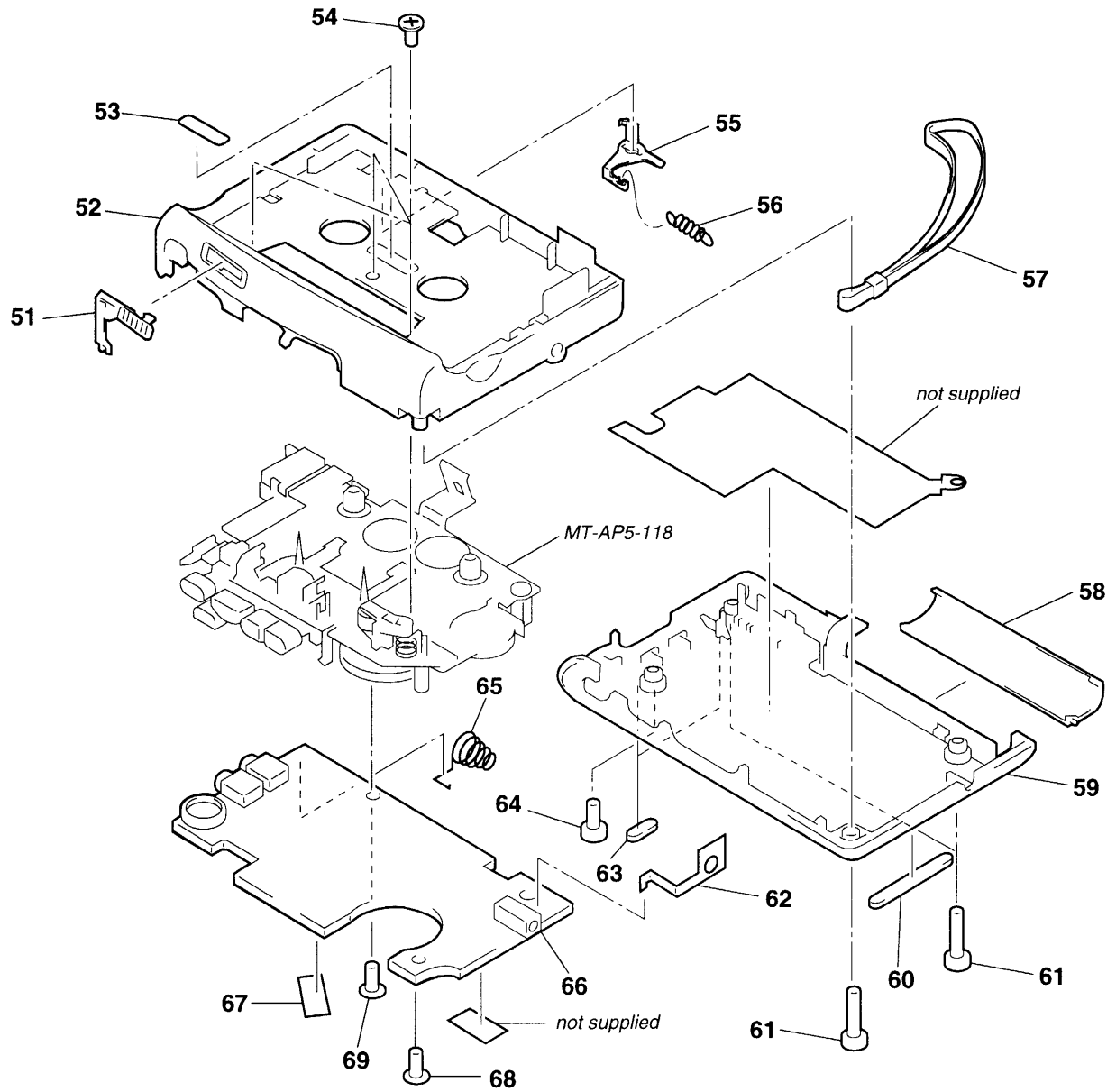
- NOTE :
- -XX, -X mean standardized parts, so they may have some difference from the original one.
  - Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
  - The mechanical parts with no reference number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


5-1. CASETTE LID SECTION



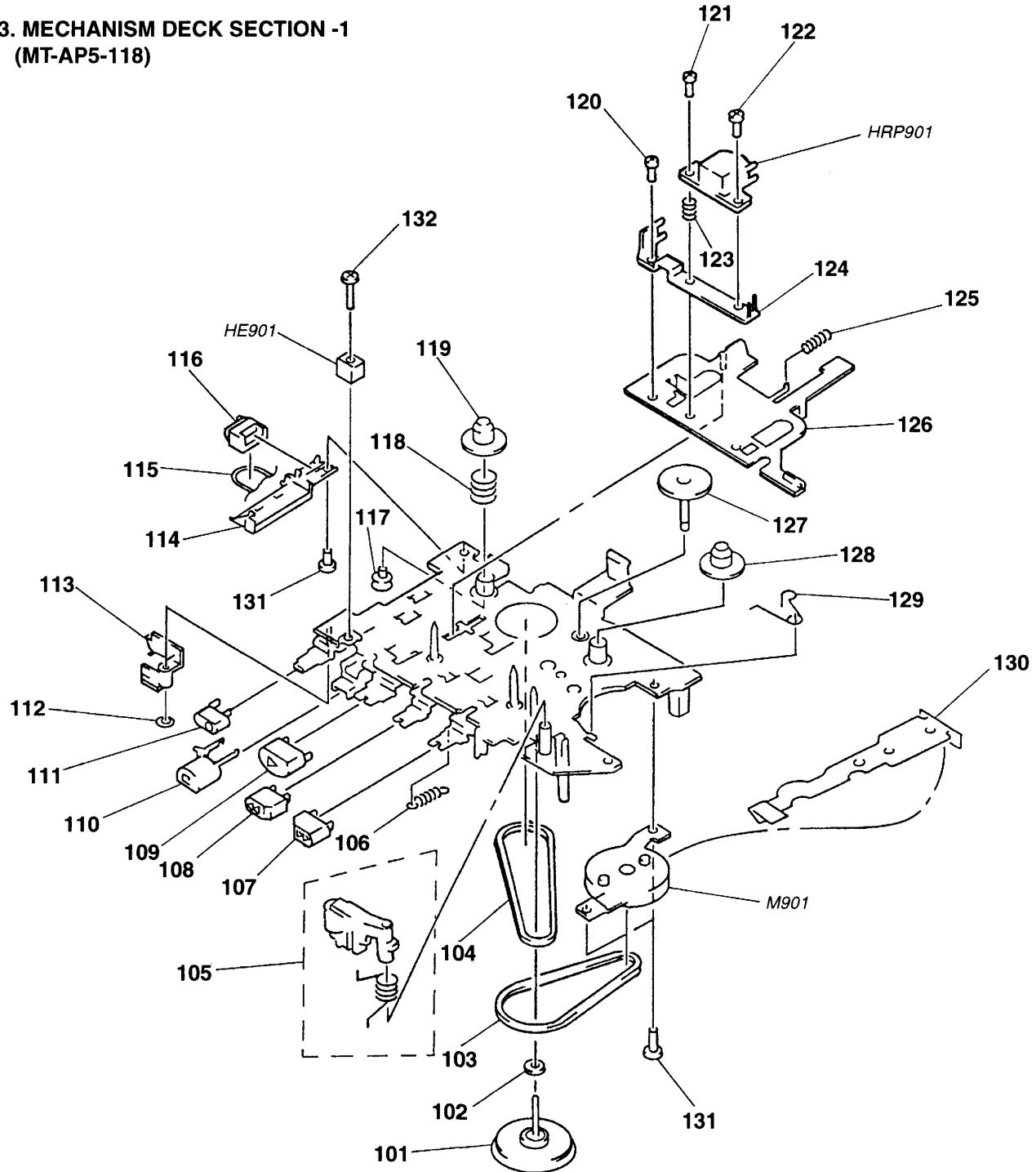
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-318-382-01	SCREW (1.7X3), TAPPING		9	3-007-918-01	WINDOW	
2	3-007-917-01	RETAINER (MICROPHONE)		10	1-663-991-11	FLEXIBLE BOARD	
3	3-007-915-01	SPRING (GROUND)		11	3-936-424-01	SPRING, CASSETTE	
4	3-007-916-01	CUSHION (MICROPHONE)		* 12	3-007-912-01	COVER	
5	X-3373-533-1	HOLDER ASSY, MICROPHONE		MIC901	1-542-298-11	MICROPHONE, ELECTRET CONDENSER	(FLAT MIC)
* 6	1-664-663-11	LED BOARD					
7	3-007-911-01	LID, CASSETTE		SP901	1-544-657-11	SPEAKER (3.6cm)	
* 8	3-007-923-01	KNOB (VOR)					






5-2. CABINET SECTION



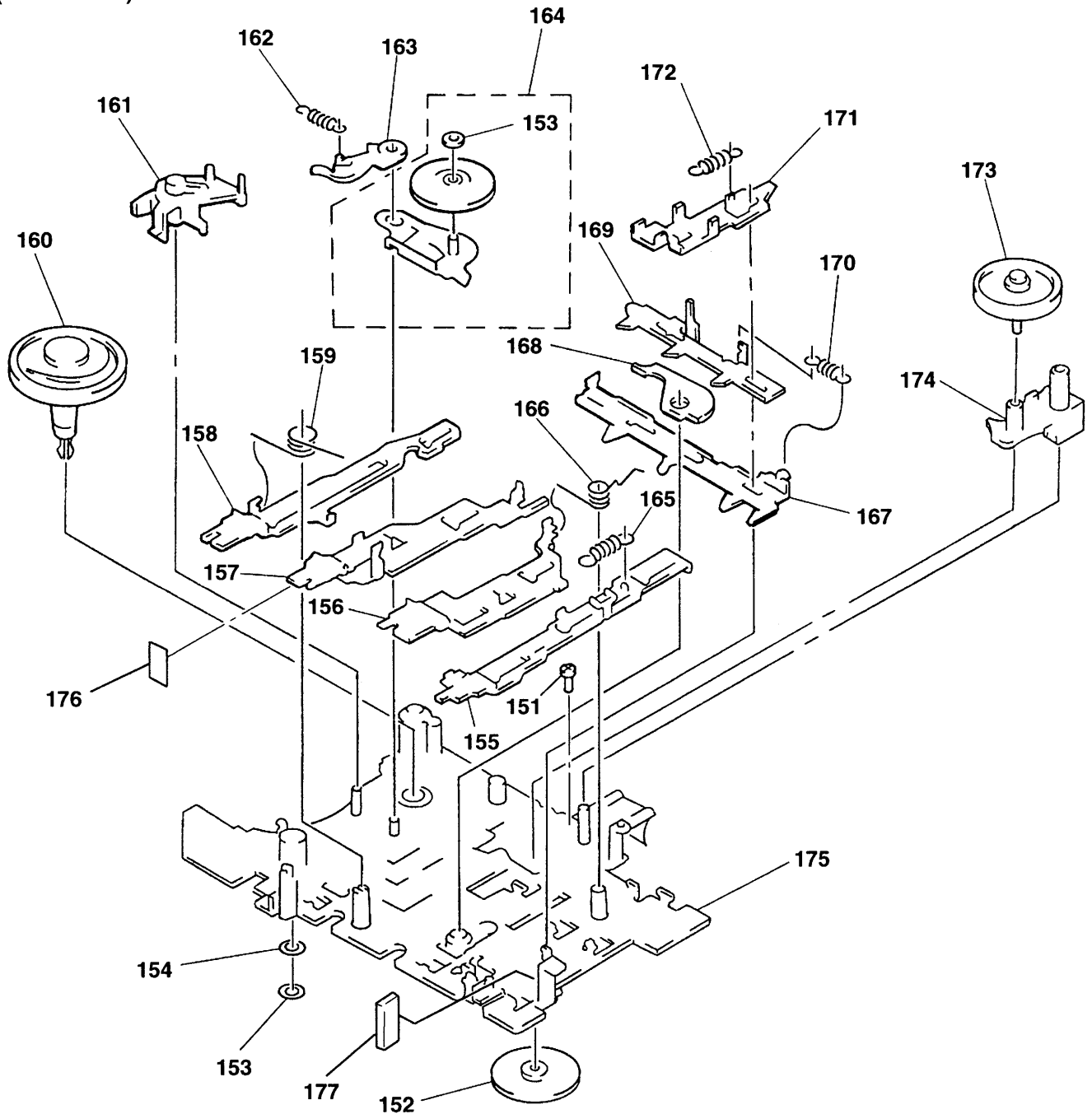
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-936-406-01	BUTTON (PAUSE  )		61	3-318-203-92	SCREW (B1.7X9), TAPPING	
52	3-007-910-01	CABINET (FRONT)		62	3-008-612-01	TERMINAL, PLUS	
53	3-578-101-31	PLATE, ORNAMENTAL		63	3-007-921-01	FOOT (A)	
54	4-969-980-21	SCREW (IB LOCK)		64	3-704-197-82	SCREW (1.4)	
55	3-936-423-01	CLAW, ERASING PREVENTION		65	3-924-750-01	TERMINAL, MINUS	
56	3-924-744-01	SPRING (CLAW DETECTION), TENSION		* 66	A-3016-923-A	MAIN BOARD, COMPLETE	
57	3-924-761-01	STRAP		67	3-831-441-XX	SPACER	
58	3-007-920-01	LID, BATTERY CASE		68	3-318-203-71	SCREW (B1.7X5), TAPPING	
59	3-007-909-01	CABINET (REAR)		69	3-345-648-01	SCREW (M1.4X3)	
60	3-007-922-01	FOOT (B)					

5-3. MECHANISM DECK SECTION -1  
(MT-AP5-118)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	X-3372-171-1	FLYWHEEL ASSY		119	3-924-673-01	GEAR (S REEL)	
102	3-701-437-51	WASHER		120	3-704-197-91	SCREW (IB LOCK)	
103	3-924-682-01	BELT (FR)		121	3-375-135-01	SCREW (1.4), SPECIAL	
104	3-924-681-01	BELT (CAPSTAN)		122	3-376-177-01	SCREW (M1.4X3.8)	
105	X-3370-386-1	PINCH ROLLER ASSY		123	3-924-685-01	SPRING (AZIMUTH), COMPRESSION	
106	3-924-644-01	SPRING (POWER TENSION), TENSION		124	3-924-645-01	BRACKET (HEAD)	
107	3-925-146-01	BUTTON (FF) (  )		125	3-925-107-01	SPRING (IDLER), COMPRESSION	
108	3-925-147-01	BUTTON (REW) (  )		126	3-924-625-03	LEVER (HEAD)	
109	3-925-148-01	BUTTON (PLAY) (  )		127	3-924-637-01	GEAR (FF)	
110	3-936-409-03	BUTTON (STOP) (  )		128	3-924-641-01	GEAR (T REEL)	
111	3-925-145-11	BUTTON (REC) (  )		129	3-936-582-01	SPRING (GROUND), TORSION	
112	3-578-242-11	WASHER		130	1-649-600-11	MOTOR FLEXIBLE BOARD	
113	3-936-405-01	LEVER (RELEASE)		131	4-969-980-21	SCREW (IB LOCK)	
114	3-936-422-01	BRACKET (COUNTER)		132	3-936-922-01	SCREW (EBF)	
115	3-924-683-01	BELT (COUNTER)		HE901	1-543-525-11	HEAD, MAGNETIC (ERASE)	
116	1-548-582-11	COUNTER, TAPE (SMALL TYPE)		HRP901	1-500-073-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
117	3-924-675-01	PULLEY (COUNTER)		M901	1-698-875-11	MOTOR, DC	
118	3-924-674-01	SPRING (B.T), COMPRESSION					

**5-4. MECHANISM DECK SECTION -2**  
**(MT-AP5-118)**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-366-890-01	SCREW (IB LOCK)		165	3-925-208-01	SPRING (REC), TENSION	
152	3-924-613-01	GEAR (FR)		166	3-924-643-01	SPRING (PR), TORSION	
153	3-321-483-11	RING, RETAINING		167	3-924-618-01	LEVER (LOCK)	
154	3-701-437-51	WASHER		168	3-924-639-01	LEVER (CR)	
155	3-924-624-11	LEVER (REC)		169	3-924-619-01	LEVER (SW)	
156	3-924-623-01	LEVER (PLAY)		170	3-924-684-01	SPRING (LOCK PLATE), TENSION	
157	3-924-621-01	LEVER (REW)		171	3-924-622-01	LEVER (STOP)	
158	3-924-620-01	LEVER (FF)		172	3-924-633-01	SPRING (STOP), TENSION	
159	3-924-642-01	SPRING (FR), TORSION		173	X-3370-385-1	PULLEY (FR) ASSY	
160	X-3370-388-1	TABLE ASSY, FELT		174	3-924-628-01	LEVER (FR)	
161	3-924-629-01	LEVER (DETECTION)		175	X-3372-157-1	CHASSIS ASSY	
162	3-925-207-01	SPRING (S.OFF), TENSION		176	3-831-441-99	SPACER	
163	3-924-630-01	LEVER (S.OFF)		177	3-014-080-01	SPACER	
164	X-3370-387-1	LEVER ASSY, IDLER					

## 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.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms  
METAL : Metal-film resistor  
METAL OXIDE : Metal oxide-film resistor  
F : nonflammable
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

## ● SEMICONDUCTORS

In each case, u :  $\mu$ , 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
*	1-664-663-11	LED BOARD *****		C133	1-113-688-11	ELECT CHIP 47uF 20%	4V
		< DIODE >		C134	1-113-688-11	ELECT CHIP 47uF 20%	4V
D504	8-719-057-99	LED SML-211YT-T86 (C)		C135	1-135-201-11	TANTALUM CHIP 10uF 20%	4V
D505	8-719-059-96	LED SML-210LT-T86 (REC)		C136	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
D506	8-719-059-96	LED SML-210LT-T86 (BATT)					
		< VARIABLE RESISTOR >		C137	1-164-346-11	CERAMIC CHIP 1uF	16V
RV601	1-225-422-11	RES, VAR, CARBON 100K (SPEED/PITCH CONTROL)		C138	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
		< SWITCH >		C142	1-126-246-11	ELECT CHIP 220uF 20%	4V
S501	1-692-605-31	SWITCH, SLIDE (V • O • R)		C143	1-164-156-11	CERAMIC CHIP 0.1uF	25V
*****				C144	1-162-974-11	CERAMIC CHIP 0.01uF	50V
*	A-3016-923-A	MAIN BOARD, COMPLETE *****		C146	1-107-823-11	CERAMIC CHIP 0.47uF 10%	16V
		< CAPACITOR >		C147	1-164-346-11	CERAMIC CHIP 1uF	16V
C102	1-164-361-11	CERAMIC CHIP 0.047uF	16V	C148	1-164-677-11	CERAMIC CHIP 0.033uF 10%	16V
C103	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C149	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C104	1-162-974-11	CERAMIC CHIP 0.01uF	50V	C150	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C105	1-163-077-00	CERAMIC CHIP 0.1uF 10%	25V	C401	1-163-239-11	CERAMIC CHIP 33PF 5%	50V
C106	1-104-908-11	TANTAL. CHIP 47uF 20%	4V	C402	1-104-908-11	TANTAL. CHIP 47uF 20%	4V
C107	1-104-908-11	TANTAL. CHIP 47uF 20%	4V	C403	1-135-201-11	TANTALUM CHIP 10uF 20%	4V
C110	1-135-180-21	TANTALUM CHIP 3.3uF 20%	6.3V	C404	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C112	1-164-676-11	CERAMIC CHIP 2200PF 5%	16V	C405	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C113	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	C406	1-163-014-00	CERAMIC CHIP 0.0027uF 10%	50V
C114	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	C407	1-163-036-00	CERAMIC CHIP 0.068uF	50V
C116	1-104-908-11	TANTAL. CHIP 47uF 20%	4V	C408	1-164-346-11	CERAMIC CHIP 1uF	16V
C117	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	C409	1-163-023-00	CERAMIC CHIP 0.015uF 5%	50V
C118	1-162-962-11	CERAMIC CHIP 470PF 10%	50V	C410	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C119	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C411	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C120	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V	C412	1-104-563-11	FILM CHIP 0.1uF 5%	16V
C121	1-164-346-11	CERAMIC CHIP 1uF	16V	C413	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C122	1-162-927-11	CERAMIC CHIP 100PF 5%	50V	C414	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C123	1-135-201-11	TANTALUM CHIP 10uF 20%	4V	C415	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C125	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C416	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C126	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C417	1-135-180-21	TANTALUM CHIP 3.3uF 20%	6.3V
C127	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C418	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V
C128	1-164-346-11	CERAMIC CHIP 1uF	16V	C419	1-135-151-21	TANTALUM CHIP 4.7uF 20%	4V
C129	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V	C420	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C130	1-162-961-11	CERAMIC CHIP 330PF 10%	50V	C421	1-164-346-11	CERAMIC CHIP 1uF	16V
C131	1-135-201-11	TANTALUM CHIP 10uF 20%	4V	C423	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C132	1-164-677-11	CERAMIC CHIP 0.033uF 10%	16V	C424	1-164-346-11	CERAMIC CHIP 1uF	16V
				C426	1-164-005-11	CERAMIC CHIP 0.47uF	25V
				C429	1-164-715-11	CERAMIC CHIP 0.0068uF 5%	50V
				C430	1-164-346-11	CERAMIC CHIP 1uF	16V
				C431	1-162-961-11	CERAMIC CHIP 330PF 10%	50V
				C432	1-135-151-21	TANTALUM CHIP 4.7uF 20%	4V
				C433	1-104-847-11	TANTAL. CHIP 22uF 20%	4V
				C434	1-164-346-11	CERAMIC CHIP 1uF	16V
				C501	1-164-156-11	CERAMIC CHIP 0.1uF	25V
				C502	1-164-156-11	CERAMIC CHIP 0.1uF	25V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C503	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V			< COIL >			
C504	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V						
C505	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	L401	1-412-030-11	INDUCTOR CHIP	22uH		
						L701	1-412-030-11	INDUCTOR CHIP	22uH		
C506	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	L702	1-414-222-11	INDUCTOR	120uH		
C507	1-164-156-11	CERAMIC CHIP	0.1uF		25V	L703	1-412-030-11	INDUCTOR CHIP	22uH		
C508	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V			< TRANSISTOR >			
C509	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V						
C510	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	Q101	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
						Q102	8-729-230-63	TRANSISTOR	2SC4116-YG		
C601	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	Q103	8-729-230-63	TRANSISTOR	2SC4116-YG		
C604	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	Q104	8-729-230-63	TRANSISTOR	2SC4116-YG		
C606	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	Q105	8-729-230-63	TRANSISTOR	2SC4116-YG		
C607	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V						
C608	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	Q106	8-729-402-93	TRANSISTOR	UN5214-TX		
						Q401	8-729-030-46	TRANSISTOR	XP4314-TX		
C609	1-164-156-11	CERAMIC CHIP	0.1uF		25V	Q402	8-729-402-45	TRANSISTOR	UN5212		
C610	1-164-156-11	CERAMIC CHIP	0.1uF		25V	Q501	8-729-402-96	TRANSISTOR	UN5114		
C613	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	Q502	8-729-429-44	TRANSISTOR	XP1501		
C701	1-113-688-11	ELECT CHIP	47uF	20%	4V						
C702	1-162-974-11	CERAMIC CHIP	0.01uF		50V	Q503	8-729-402-93	TRANSISTOR	UN5214-TX		
						Q504	8-729-429-44	TRANSISTOR	XP1501		
C703	1-113-991-11	TANTAL. CHIP	33uF	20%	16V	Q505	8-729-402-96	TRANSISTOR	UN5114		
C704	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V	Q601	8-729-402-45	TRANSISTOR	UN5212		
C705	1-113-688-11	ELECT CHIP	47uF	20%	4V	Q602	8-729-427-19	TRANSISTOR	XP4114-TXE		
		< CONNECTOR >									
CN101	1-750-061-11	JACK,DC(POLARITY UNIFIED TYPE) (DC IN 3V)				Q603	8-729-823-86	TRANSISTOR	2SA1745		
		< DIODE >				Q604	8-729-823-86	TRANSISTOR	2SA1745		
						Q605	8-729-030-46	TRANSISTOR	XP4314-TX		
						Q606	8-729-030-46	TRANSISTOR	XP4314-TX		
								< RESISTOR >			
D101	8-719-977-03	DIODE DTZ5.6B				R101	1-216-821-11	METAL CHIP	1K	5%	1/16W
D102	8-719-016-74	DIODE 1SS352				R102	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
D103	8-719-016-74	DIODE 1SS352				R103	1-216-815-11	METAL CHIP	330	5%	1/16W
D104	8-719-016-74	DIODE 1SS352				R104	1-216-815-11	METAL CHIP	330	5%	1/16W
D401	8-719-016-74	DIODE 1SS352				R105	1-216-833-11	METAL CHIP	10K	5%	1/16W
D402	8-719-016-74	DIODE 1SS352				R107	1-216-821-11	METAL CHIP	1K	5%	1/16W
D403	8-719-016-74	DIODE 1SS352				R108	1-216-833-11	METAL CHIP	10K	5%	1/16W
D404	8-719-016-74	DIODE 1SS352				R109	1-216-809-11	METAL CHIP	100	5%	1/16W
D405	8-719-016-74	DIODE 1SS352				R111	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
D406	8-719-016-74	DIODE 1SS352				R112	1-216-841-11	METAL CHIP	47K	5%	1/16W
D407	8-719-016-74	DIODE 1SS352				R113	1-216-841-11	METAL CHIP	47K	5%	1/16W
D501	8-719-049-09	DIODE 1SS367-T3SONY				R114	1-216-821-11	METAL CHIP	1K	5%	1/16W
D701	8-719-049-09	DIODE 1SS367-T3SONY				R115	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
		< IC >				R116	1-216-835-11	METAL CHIP	15K	5%	1/16W
						R117	1-216-845-11	METAL CHIP	100K	5%	1/16W
IC101	8-759-339-54	IC NJM-2128M-TE2									
IC401	8-759-424-75	IC FB1056				R118	1-216-821-11	METAL CHIP	1K	5%	1/16W
IC402	8-759-184-64	IC TC4W66FU				R121	1-216-841-11	METAL CHIP	47K	5%	1/16W
IC403	8-759-710-79	IC NJM2107F				R122	1-216-793-11	METAL GLAZE	4.7	5%	1/16W
IC501	8-759-701-51	IC NJM2072M				R123	1-216-801-11	METAL CHIP	22	5%	1/16W
						R124	1-216-841-11	METAL CHIP	47K	5%	1/16W
IC502	8-759-177-44	IC S-80715AN-DC-T1									
IC601	8-759-275-47	IC LB1674V-TLM				R125	1-216-849-11	METAL CHIP	220K	5%	1/16W
IC602	8-759-280-84	IC S-81211SG-QA-T1				R126	1-216-813-11	METAL CHIP	220	5%	1/16W
IC603	8-759-184-64	IC TC4W66FU				R127	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
IC701	8-759-432-30	IC S-81337HG-KE-T1				R128	1-216-817-11	METAL CHIP	470	5%	1/16W
						R129	1-216-813-11	METAL CHIP	220	5%	1/16W
IC702	8-759-092-54	IC RH5RH501A									
		< JACK >				R130	1-216-845-11	METAL CHIP	100K	5%	1/16W
						R131	1-216-807-11	METAL CHIP	68	5%	1/16W
J101	1-563-319-21	JACK (MIC)				R132	1-216-833-11	METAL CHIP	10K	5%	1/16W
J102	1-563-319-21	JACK (EAR)				R134	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
						R135	1-216-851-11	METAL CHIP	330K	5%	1/16W
						R136	1-216-833-11	METAL CHIP	10K	5%	1/16W

# MAIN

Ref. No.	Part No.	Description	Remark
R137	1-216-821-11	METAL CHIP 1K 5%	1/16W
R138	1-216-814-11	METAL CHIP 270 5%	1/16W
R139	1-216-845-11	METAL CHIP 100K 5%	1/16W
R140	1-216-845-11	METAL CHIP 100K 5%	1/16W
R141	1-216-845-11	METAL CHIP 100K 5%	1/16W
R142	1-216-851-11	METAL CHIP 330K 5%	1/16W
R144	1-216-821-11	METAL CHIP 1K 5%	1/16W
R145	1-216-817-11	METAL CHIP 470 5%	1/16W
R146	1-216-839-11	METAL CHIP 33K 5%	1/16W
R147	1-216-839-11	METAL CHIP 33K 5%	1/16W
R401	1-216-845-11	METAL CHIP 100K 5%	1/16W
R402	1-216-833-11	METAL CHIP 10K 5%	1/16W
R403	1-216-833-11	METAL CHIP 10K 5%	1/16W
R404	1-216-855-11	METAL CHIP 680K 5%	1/16W
R405	1-216-821-11	METAL CHIP 1K 5%	1/16W
R406	1-216-833-11	METAL CHIP 10K 5%	1/16W
R407	1-216-821-11	METAL CHIP 1K 5%	1/16W
R408	1-216-855-11	METAL CHIP 680K 5%	1/16W
R409	1-216-833-11	METAL CHIP 10K 5%	1/16W
R410	1-216-833-11	METAL CHIP 10K 5%	1/16W
R411	1-216-833-11	METAL CHIP 10K 5%	1/16W
R412	1-216-833-11	METAL CHIP 10K 5%	1/16W
R413	1-216-833-11	METAL CHIP 10K 5%	1/16W
R414	1-216-845-11	METAL CHIP 100K 5%	1/16W
R415	1-216-833-11	METAL CHIP 10K 5%	1/16W
R416	1-216-857-11	METAL CHIP 1M 5%	1/16W
R417	1-216-833-11	METAL CHIP 10K 5%	1/16W
R418	1-216-837-11	METAL CHIP 22K 5%	1/16W
R420	1-216-845-11	METAL CHIP 100K 5%	1/16W
R422	1-216-845-11	METAL CHIP 100K 5%	1/16W
R423	1-216-821-11	METAL CHIP 1K 5%	1/16W
R424	1-216-845-11	METAL CHIP 100K 5%	1/16W
R425	1-216-833-11	METAL CHIP 10K 5%	1/16W
R426	1-216-841-11	METAL CHIP 47K 5%	1/16W
R427	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R428	1-216-833-11	METAL CHIP 10K 5%	1/16W
R429	1-216-833-11	METAL CHIP 10K 5%	1/16W
R430	1-216-845-11	METAL CHIP 100K 5%	1/16W
R432	1-216-845-11	METAL CHIP 100K 5%	1/16W
R434	1-216-832-11	METAL CHIP 8.2K 5%	1/16W
R435	1-216-833-11	METAL CHIP 10K 5%	1/16W
R436	1-216-833-11	METAL CHIP 10K 5%	1/16W
R501	1-216-833-11	METAL CHIP 10K 5%	1/16W
R502	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
R504	1-216-845-11	METAL CHIP 100K 5%	1/16W
R505	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R506	1-216-833-11	METAL CHIP 10K 5%	1/16W
R507	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R508	1-216-819-11	METAL CHIP 680 5%	1/16W
R509	1-216-819-11	METAL CHIP 680 5%	1/16W
R510	1-216-813-11	METAL CHIP 220 5%	1/16W
R511	1-218-269-11	METAL GLAZE 360 5%	1/16W
R512	1-216-857-11	METAL CHIP 1M 5%	1/16W
R513	1-216-837-11	METAL CHIP 22K 5%	1/16W
R514	1-216-837-11	METAL CHIP 22K 5%	1/16W
R515	1-216-857-11	METAL CHIP 1M 5%	1/16W
R516	1-216-837-11	METAL CHIP 22K 5%	1/16W
R518	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
R519	1-216-833-11	METAL CHIP 10K 5%	1/16W

Ref. No.	Part No.	Description	Remark
R520	1-216-833-11	METAL CHIP 10K 5%	1/16W
R521	1-216-833-11	METAL CHIP 10K 5%	1/16W
R522	1-216-857-11	METAL CHIP 1M 5%	1/16W
R601	1-216-813-11	METAL CHIP 220 5%	1/16W
R602	1-216-837-11	METAL CHIP 22K 5%	1/16W
R603	1-216-837-11	METAL CHIP 22K 5%	1/16W
R604	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R606	1-216-821-11	METAL CHIP 1K 5%	1/16W
R607	1-216-809-11	METAL CHIP 100 5%	1/16W
R608	1-216-809-11	METAL CHIP 100 5%	1/16W
R609	1-216-830-11	METAL CHIP 5.6K 5%	1/16W
R610	1-216-823-11	METAL CHIP 1.5K 5%	1/16W
R611	1-216-809-11	METAL CHIP 100 5%	1/16W
R612	1-216-817-11	METAL CHIP 470 5%	1/16W
R613	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R614	1-216-839-11	METAL CHIP 33K 5%	1/16W
R616	1-216-833-11	METAL CHIP 10K 5%	1/16W
R617	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
R619	1-216-833-11	METAL CHIP 10K 5%	1/16W
< VARIABLE RESISTOR >			
RV101	1-225-423-11	RES, VAR, CARBON 50K (VOLUME CONTROL)	
RV401	1-223-277-21	RES, ADJ, CERMET 47K (SPEED/PITCH CONTROL, AUTO)	
RV602	1-223-277-21	RES, ADJ, CERMET 47K (TAPE SPEED, MID)	
RV603	1-223-273-11	RES, ADJ, CERMET 1K (TAPE SPEED, MAX)	
RV604	1-223-273-11	RES, ADJ, CERMET 1K (TAPE SPEED, MIN)	
< SWITCH >			
S101	1-572-964-11	SWITCH, SLIDE (PB/REC)	
S102	1-572-688-11	SWITCH, PUSH (1 KEY) (POWER)	
S502	1-572-922-11	SWITCH, SLIDE (PAUSE ■■)	
< TRANSFORMER >			
T101	1-433-286-11	TRANSFORMER, BIAS OSCILLATION	
< THERMISTOR >			
TH602	1-801-414-11	THERMISTOR (1608)	
THP601	1-801-526-11	THERMISTOR, POSITIVE	
< CONNECTOR >			
W101	1-573-358-11	CONNECTOR, FFC/FPC 18P	
< VIBRATOR >			
X401	1-760-227-11	VIBRATOR, CERAMIC (768kHz)	
*****			
MISCELLANEOUS			
*****			
10	1-663-991-11	FLEXIBLE BOARD	
116	1-548-582-11	COUNTER, TAPE (SMALL TYPE)	
130	1-649-600-11	MOTOR FLEXIBLE BOARD	
HE901	1-543-525-11	HEAD, MAGNETIC (ERASE)	
HRP901	1-500-073-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
M901	1-698-875-11	MOTOR, DC	
MIC901	1-542-298-11	MICROPHONE, ELECTRET CONDENSER (FLAT MIC)	
SP901	1-544-657-11	SPEAKER (3.6cm)	
*****			

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
		ACCESSORIES & PACKING MATERIALS	
		*****	
3-858-918-11		MANUAL, INSTRUCTION (ENGLISH) (US)	
3-858-918-21		MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (Canadian, AEP, E)	
3-858-918-31		MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN ) (AEP)	





# TCM-AP5V

SONY®

## SERVICE MANUAL

US Model  
Canadian Model  
AEP Model  
E Model

### SUPPLEMENT - 1

File this Supplement with the Service Manual.

**Subject :**

- **CHANGED PARTS LIST**
- **EAST EUROPEAN MODEL HAS BEEN ADDED**

(ECN-MT700436)

The East European model is approximately the same as the AEP model.  
Only difference between AEP model and East European model are listed.  
For other informations, please refer to the previously issued service manual (9-923-147-12).

• **CHANGED PARTS LIST**  
**ACCESSORIES & PACKING MATERIALS**

Page	Before Change		After Change	
	Part No.	Description	Part No.	Description
23	3-858-918-11	MANUAL, INSTRUCTION (ENGLISH) (US)	3-858-918-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (US, Canadian)
	3-858-918-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (Canadian, AEP, E)	3-858-918-22	MANUAL, INSTRUCTION (ENGLISH, GERMAN, SPANISH, PORTUGUESE) (AEP, E)
	3-858-918-31	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)	3-858-918-32	MANUAL, INSTRUCTION (FRENCH, DUTCH, SWEDISH, ITALIAN) (AEP)

• **DIFFERENCE PARTS LIST**  
**ACCESSORIES & PACKING MATERIALS**

Page	AEP Model		East European Model	
	Part No.	Description	Part No.	Description
23	3-858-918-22	MANUAL, INSTRUCTION (ENGLISH, GERMAN, SPANISH, PORTUGUESE) (AEP, E)	3-858-918-22	MANUAL, INSTRUCTION (ENGLISH, GERMAN, SPANISH, PORTUGUESE) (AEP, E, East European)
	3-858-918-32	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)	3-858-918-41	MANUAL, INSTRUCTION (POLISH, RUSSIAN, HUNGARIAN, CZECH) (East European)