

BM-23MK2

SERVICE MANUAL

US Model

Ver. 1.0 2005.08



Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MB-23MK2-101

SPECIFICATIONS

Track system

4-track 2-channel monaural

Tape

Normal position type

Tape speeds

4.8 cm/sec. (1⁷/₈ ips), 2.4 cm/sec. (1⁵/₁₆ ips)

Speaker

Approx. 3.6 cm (5/32 inches) dia.

Frequency response

200 – 8,000 Hz at 4.8 cm/sec.

Input

Microphone input jack [PLUG IN POWER] (minijack)

Sensitivity 0.3 mV for 3 kilohms or lower impedance

Output

Earphone jack (minijack) for 8-ohm earphone or load impedance

10 kilohms or higher

Power output

240 mW (at 10 % harmonic distortion)

Power requirements

- Two R6 (size AA) batteries (not supplied): 3V DC
- Sony AC-E30HG AC power adaptor (not supplied)
- Sony DCC-E345 car battery cord (not supplied): 12V car battery

Dimensions (w/h/d)

Approx. 88.1 × 129.2 × 32.3 mm (3¹/₂ × 5¹/₈ × 1⁵/₁₆ in.)

incl. projecting parts and controls

Mass

Approx. 300 g (10 oz) incl. batteries

Supplied accessory

Carrying case

Design and specifications are subject to change without notice.

PORTABLE DICTATOR

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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.

Flexible Circuit Board Repairing

- Keep the temperature of 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.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)



: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
Soldering irons using a temperature regulator should be set to about 350 °C.
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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.

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SECTION 1 SERVICING NOTES

This unit use PH501 (photo coupler) to detect reel rotation.

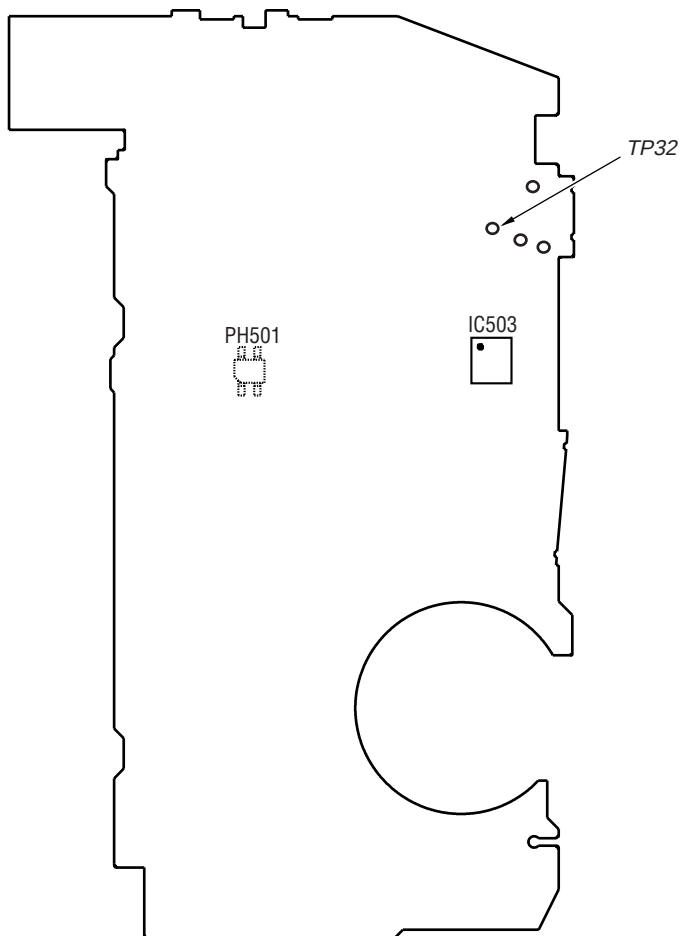
As PH501 is mounted on the AUDIO board, reel rotation will not be detected if the AUDIO board has been removed.

When performing mechanism deck operation and voltage checks whit the AUDIO board removed, perform them using the following method.

Method:

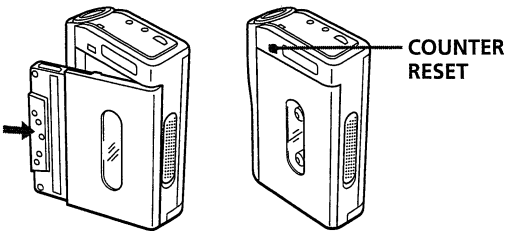
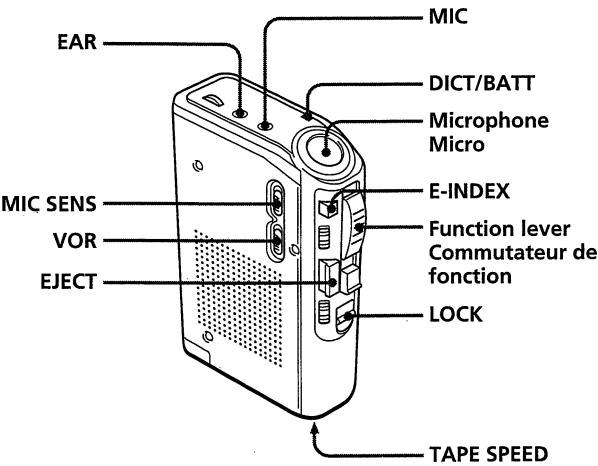
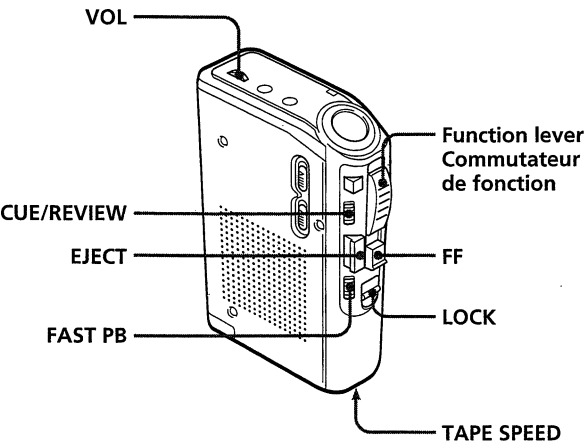
Connect TP32 of the AUDIO board and GND with a jumper wire.

【 AUDIO BOARD 】 (SIDE B)



SECTION 2
GENERAL

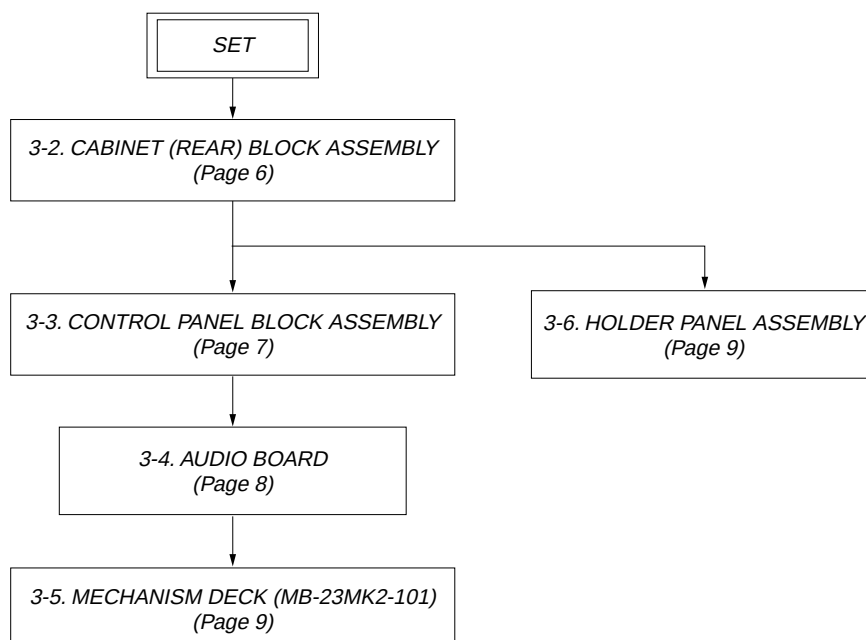
This section is extracted
from instruction manual.



SECTION 3 DISASSEMBLY

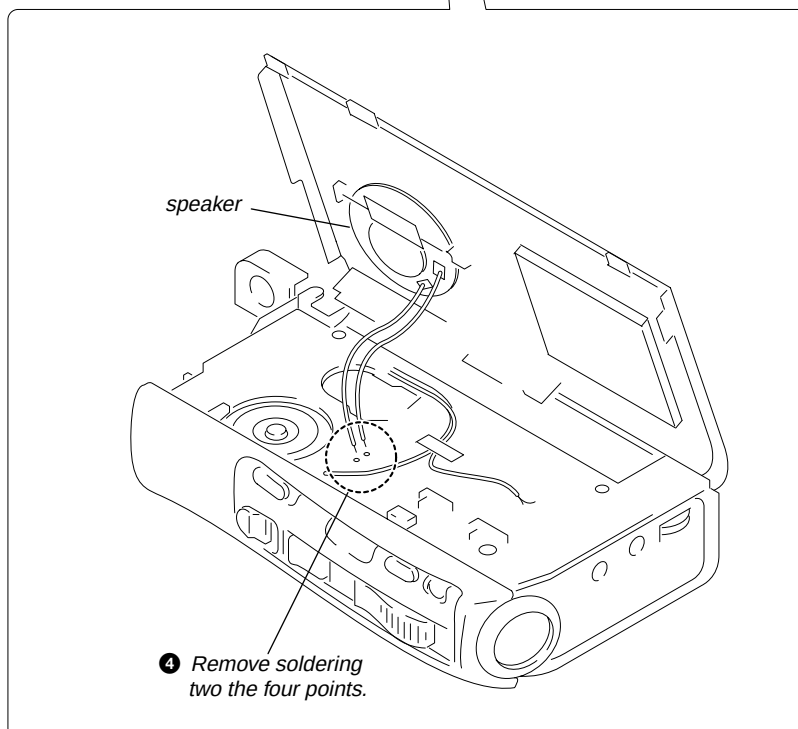
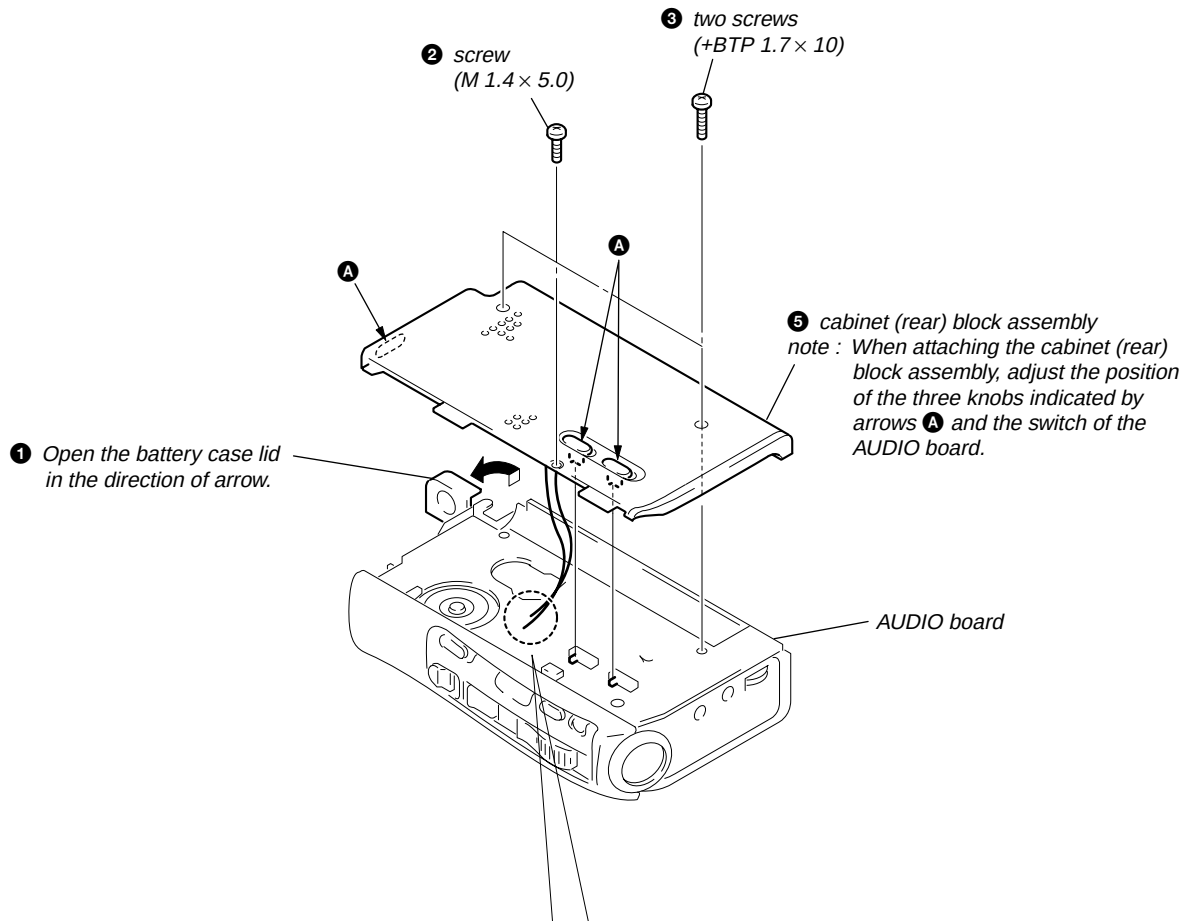
3-1. DISASSEMBLY FLOW

- This set can be disassembled in the order shown below.

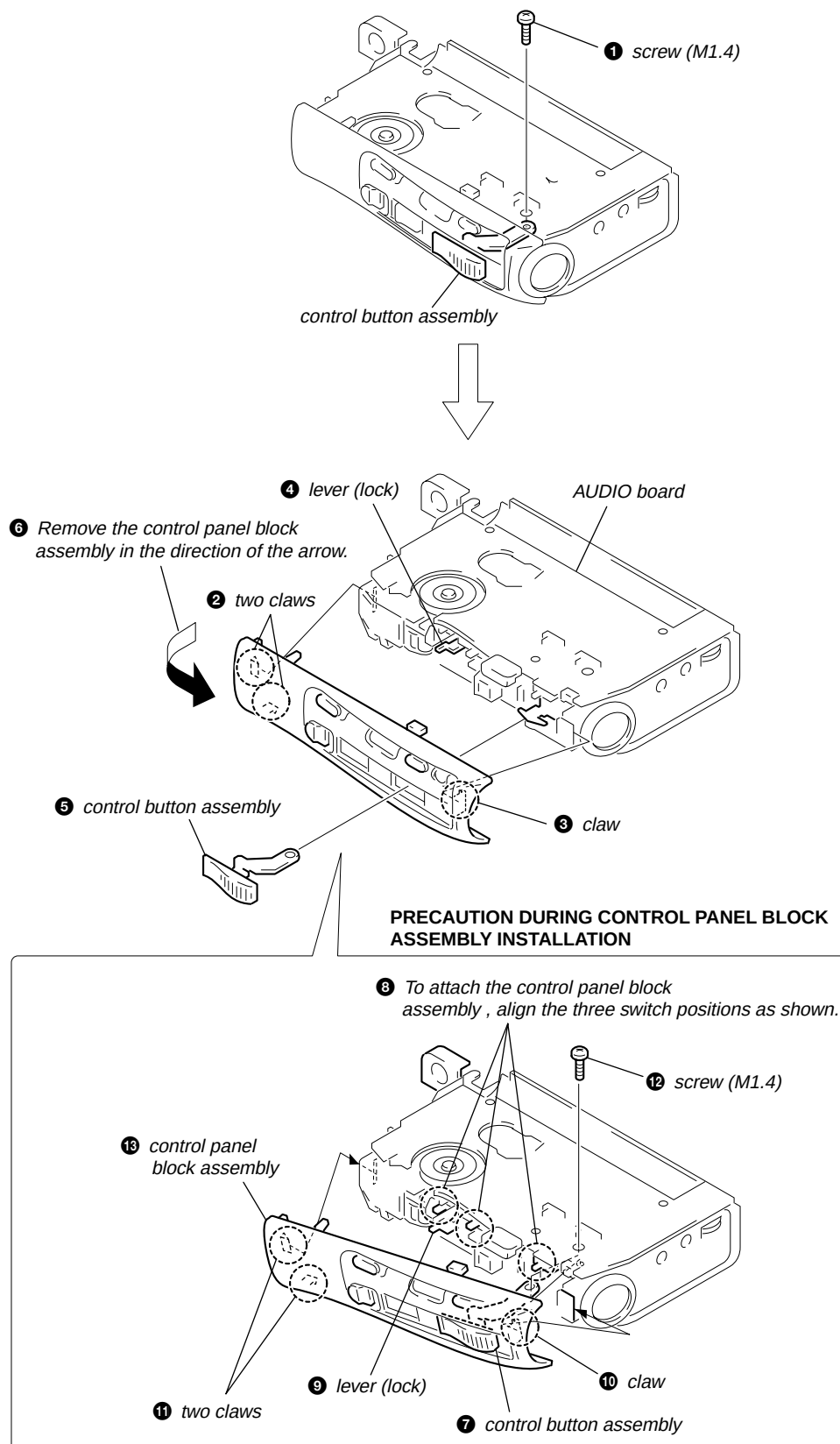


Note: Follow the disassembly procedure in the numerical order given.

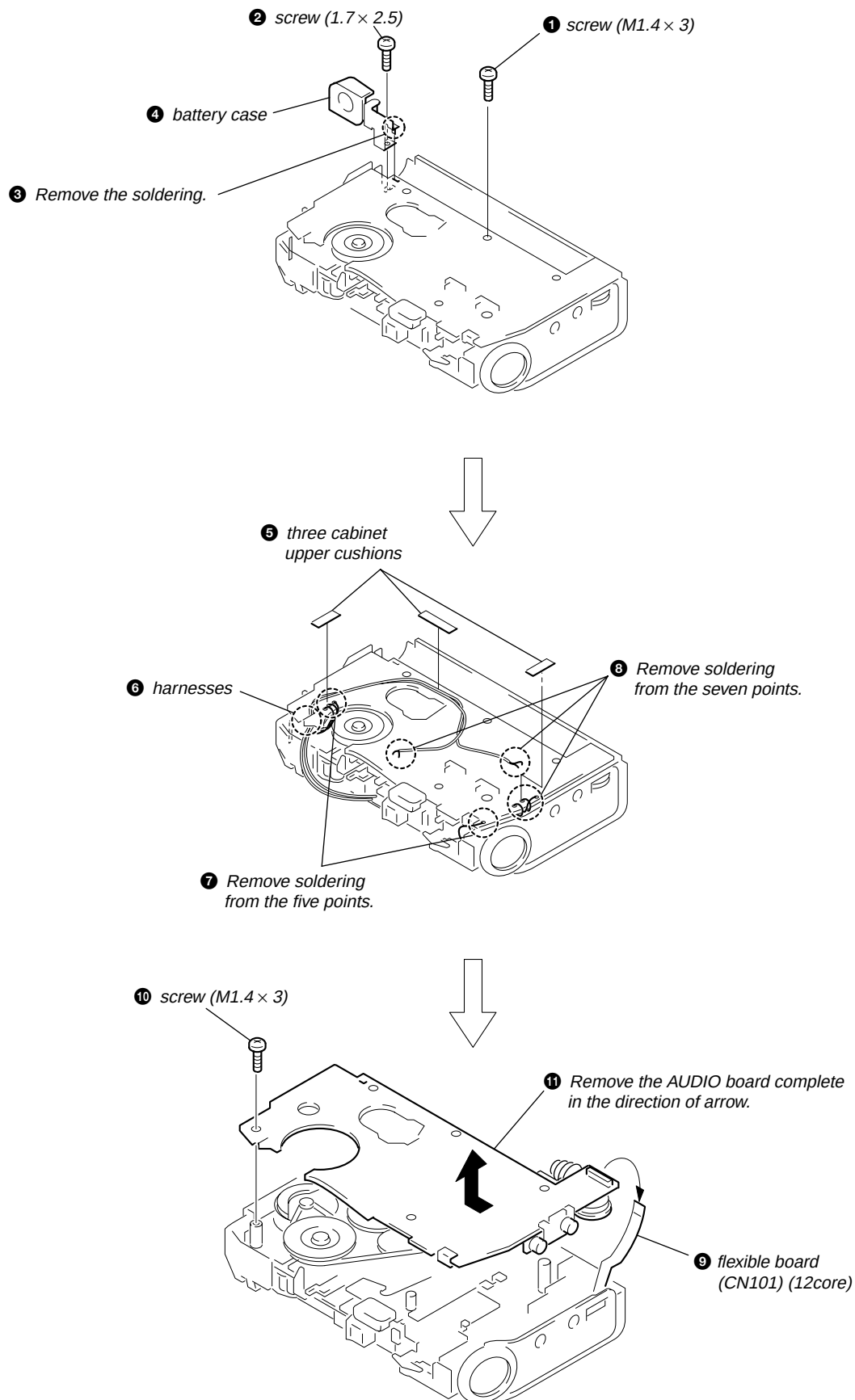
3-2. CABINET (REAR) BLOCK ASSEMBLY



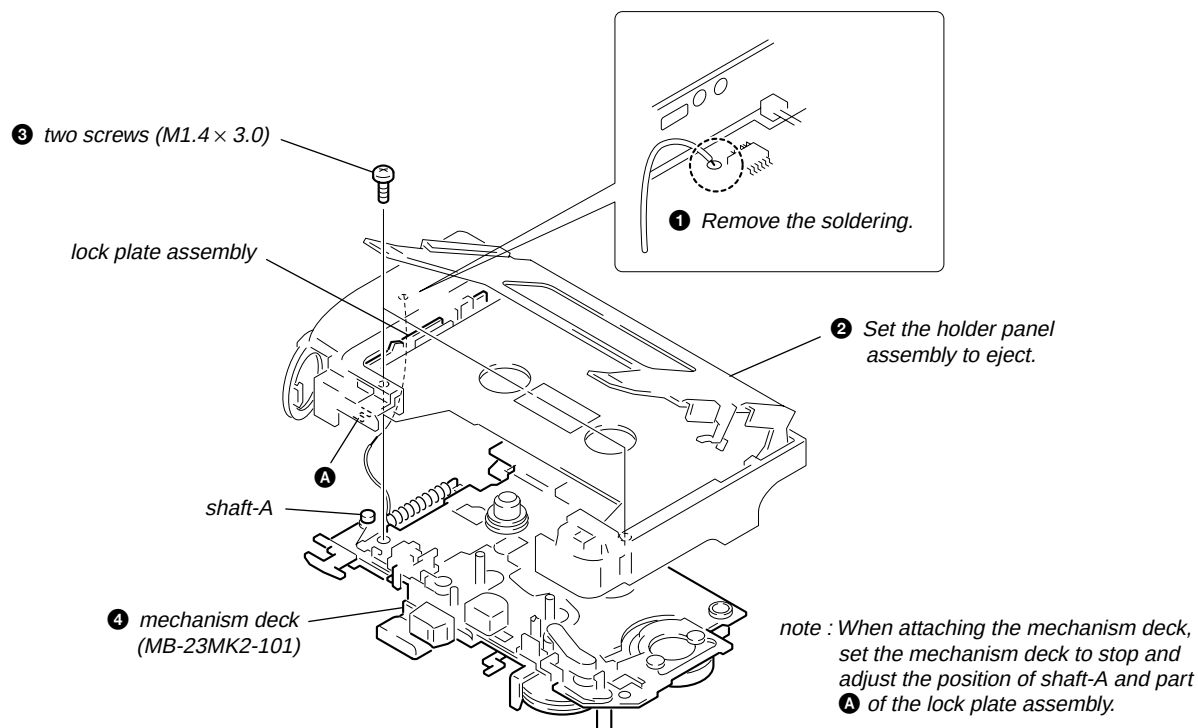
3-3. CONTROL PANEL BLOCK ASSEMBLY



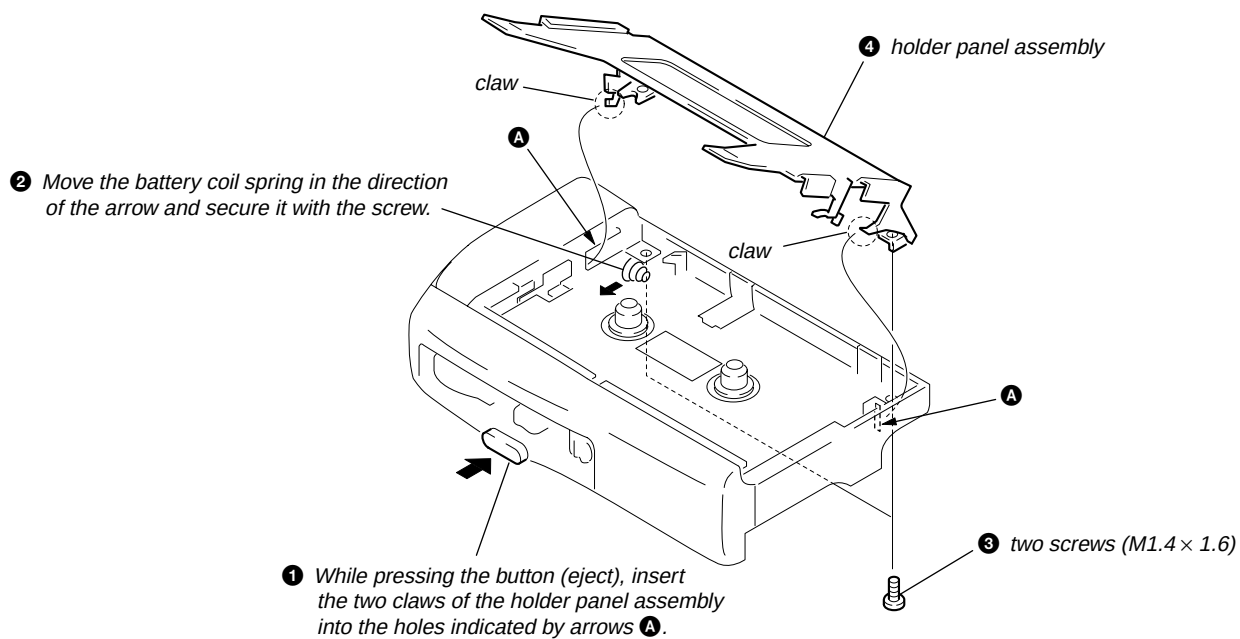
3-4. AUDIO BOARD



3-5. MECHANISM DECK (MB-23MK2-101)



3-6. HOLDER PANEL ASSEMBLY



SECTION 4 MECHANICAL ADJUSTMENTS

PRECAUTION

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

playback head	rubber belts
capstan	idlers
pinch roller	
- Demagnetize the playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- The adjustments should be performed with the rated power supply voltage (3V) unless otherwise noted.

• Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	2.06 – 3.72 mN•m 21 – 38 g•cm (0.30 – 0.52 oz•inch)
FWD Back Tension		0.05 – 0.29 mN•m 0.5 – 3 g•cm (0.01 – 0.04 oz•inch)
REV	CQ-102RC	2.06 – 3.72 mN•m 21 – 38 g•cm (0.30 – 0.52 oz•inch)
REV Back Tension		0.05 – 0.29 mN•m 0.5 – 3 g•cm (0.01 – 0.04 oz•inch)
FF	CQ-201B	more than 60 g•cm (more than 0.84 oz•inch)
REW		

• Tape Pulling Force Measurement

Mode	Torque Meter	Meter Reading
FF	CQ-403A	more than 40 g (more than 1.42 oz)
REW	CQ-403R	

SECTION 5 ELECTRICAL ADJUSTMENTS

PRECAUTION

- Power supply voltage : 3V

Test Tape

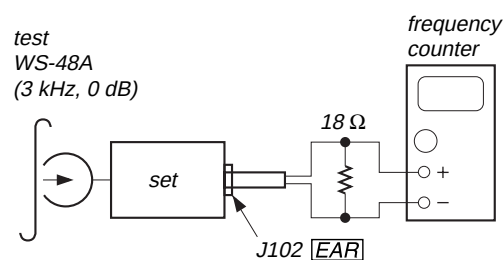
Type	Signal	Used for
WS-48A	3 kHz, 0 db	Tape Speed Adjustment

Tape Speed 4.8cm/s Adjustment

Switch position

TAPE SPEED Switch : 4.8 cm

Procedure:

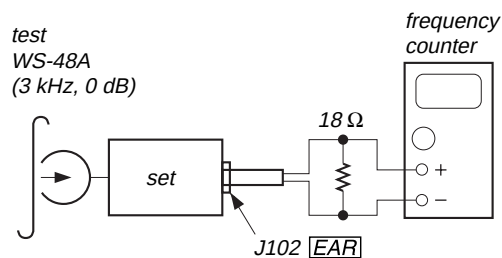


- Play back WS-48A (tape center portion) in FWD mode. Adjust the RV601 so that the frequency counter reads $2,980 \pm 30$ Hz.
- Play back WS-48A (tape center portion) in REV mode. Confirm that the reading of frequency counter is within 2.5 % from the reading in step 1.

Tape Speed 2.4cm/s Adjustment

Switch position

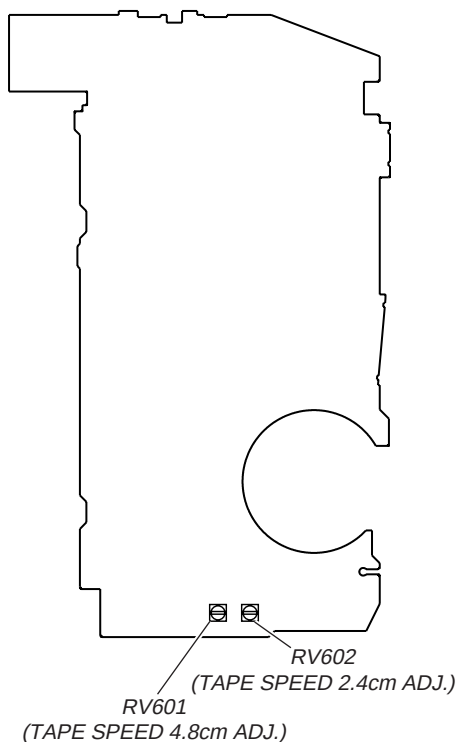
TAPE SPEED Switch : 2.4 cm

Procedure:

1. Play back WS-48A (tape center portion) in FWD mode.
Adjust the RV602 so that the frequency counter reads $1,490 \pm 15$ Hz.
2. Play back WS-48A (tape center portion) in REV mode.
Confirm that the reading of frequency counter is within 2.5 % from the reading in step 1.

Adjustment Parts Location Diagram :

【AUDIO BOARD】(SIDE B)



SECTION 6
DIAGRAMS

• Note for Printed Wiring Boards and Schematic Diagrams

Note on Printed Wiring Board:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : Pattern from the side which enables seeing.

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

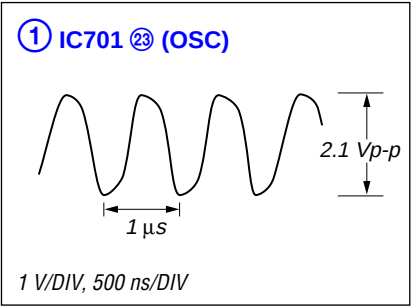
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. (p: pF) 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- : nonflammable resistor.
- : panel designation.
- : adjustment for repair.

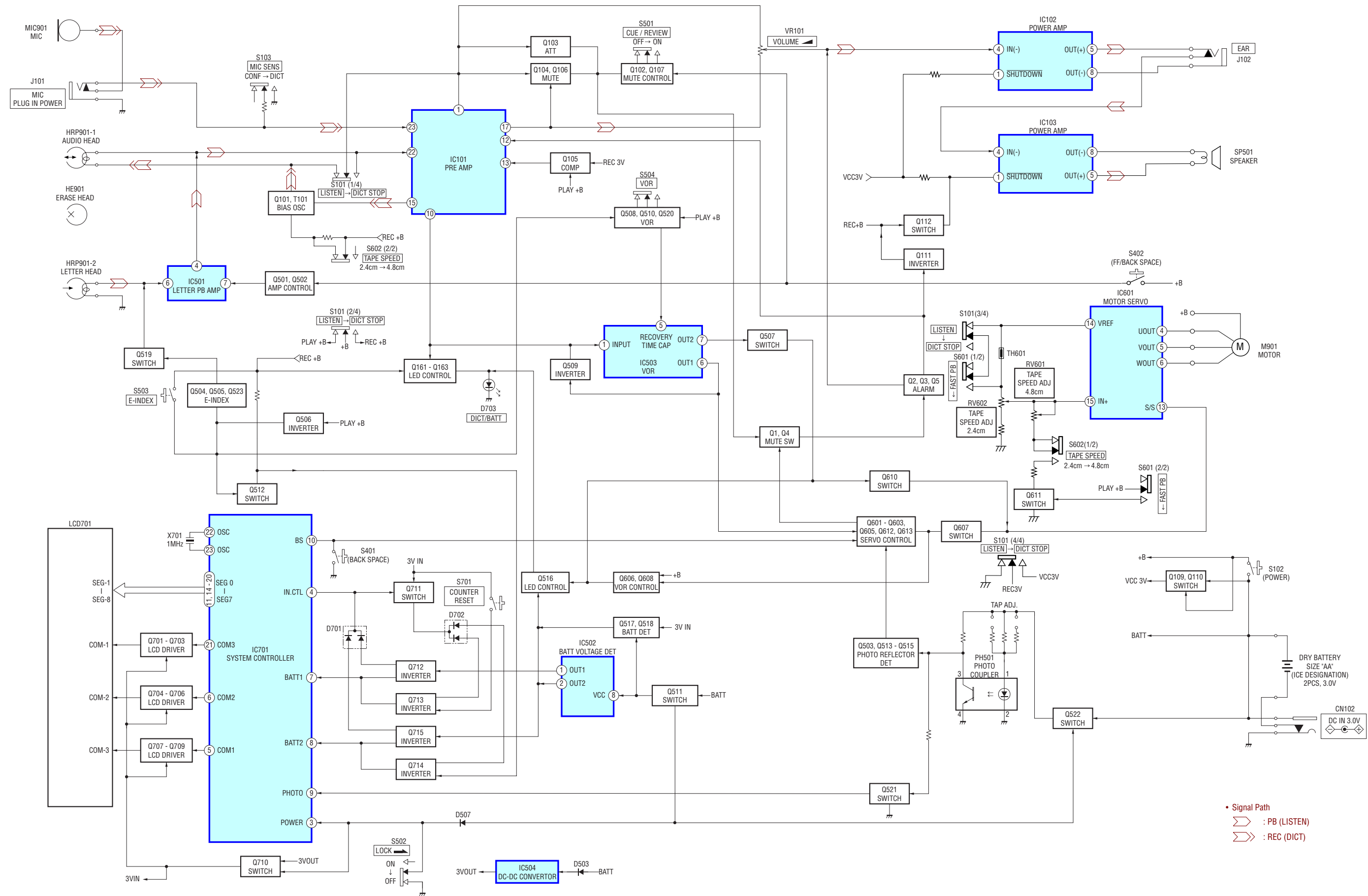
Note: The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.

- : B+ Line.
- Total current is measured with no cassette installed.
- Power voltage is dc 3V and fed with regulated dc power supply from battery terminal.
- Voltages are taken with a VOM (Input impedance 10 M Ω). 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.
- No mark : PB (LISTEN)
() : REC (DICT)
- Circled numbers refer to waveforms.
- Signal path.
Σ : PB (LISTEN)
Σ> : REC (DICT)

• Waveforms
– LCD Board –



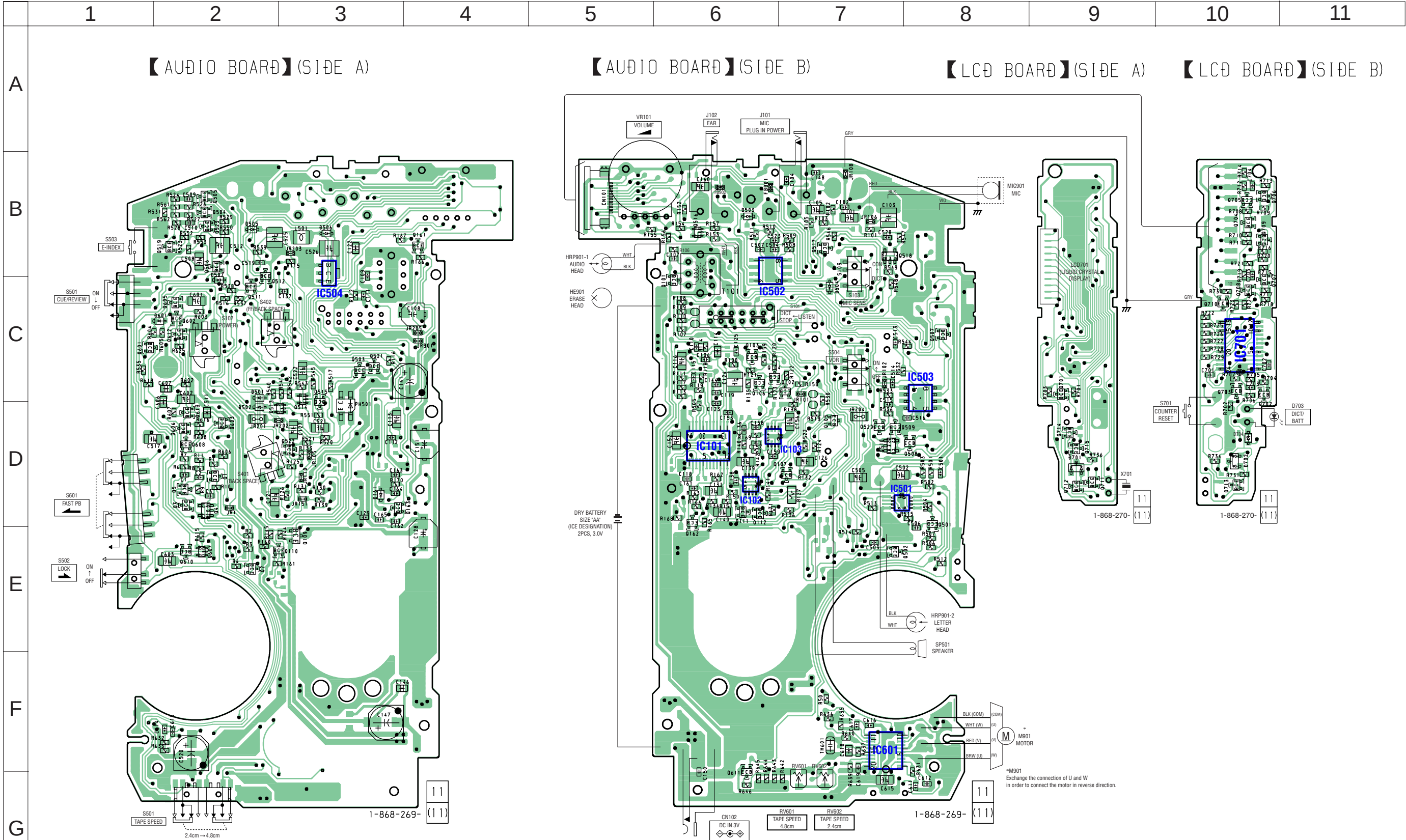
6-1. BLOCK DIAGRAM – AUDIO SECTION –



6-2. PRINTED WIRING BOARDS



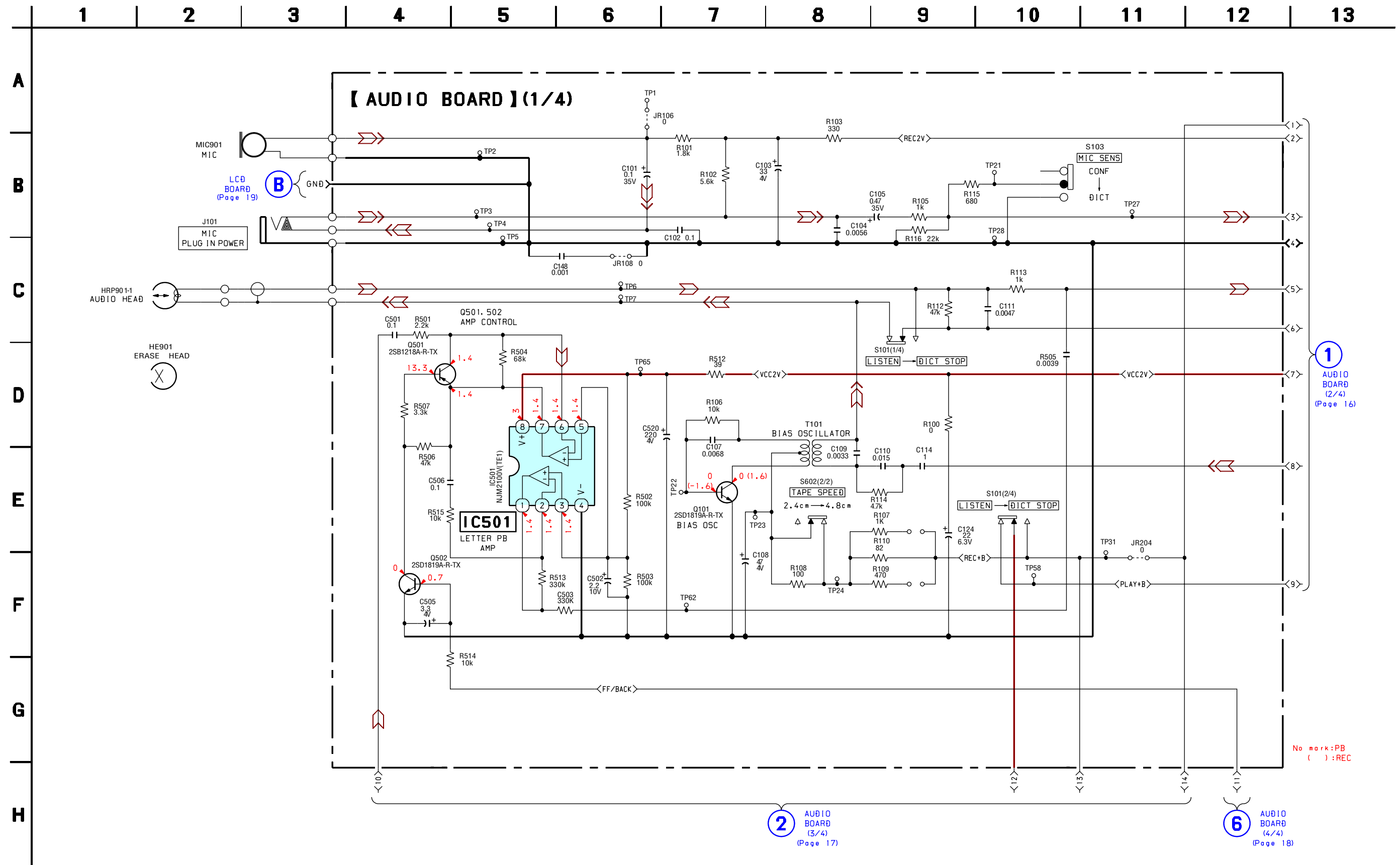
:Uses unleaded solder.



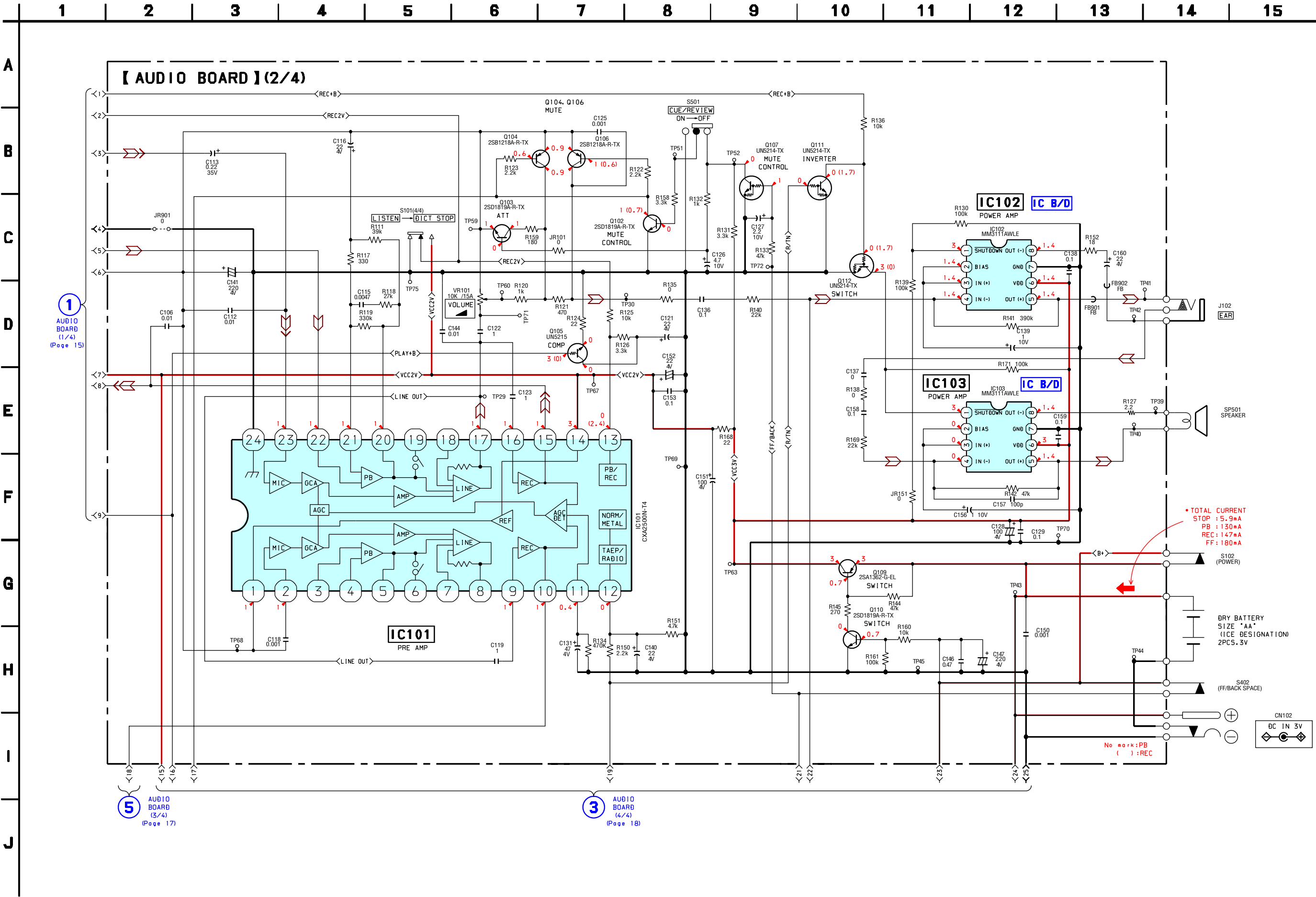
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D161	D-3	D601	C-2	IC103	D-7	Q1	D-2	Q104	C-6	Q161	B-4	Q506	B-2	Q514	C-3	Q522	D-3	Q608	D-2	Q704	B-10
D501	C-2	D701	D-9	IC501	D-7	Q2	E-2	Q105	D-7	Q162	E-6	Q507	C-8	Q515	B-3	Q523	B-2	Q610	E-2	Q705	B-10
D502	D-2	D702	D-10	IC502	C-6	Q3	D-2	Q106	C-6	Q163	D-3	Q508	D-7	Q516	B-6	Q601	C-1	Q611	F-6	Q706	B-10
D503	B-6	D703	D-11	IC503	C-8	Q4	D-2	Q107	D-7	Q501	D-8	Q509	D-7	Q517	B-7	Q602	C-2	Q612	C-2	Q707	C-10
D504	C-7	D704	D-10	IC504	B-3	Q5	D-2	Q109	E-3	Q502	E-7	Q510	D-7	Q518	B-7	Q603	D-2	Q613	D-2	Q708	C-10
D505	B-2			IC601	F-7	Q101	C-6	Q110	E-3	Q503	C-3	Q511	C-2	Q519	B-2	Q605	C-2	Q701	C-9	Q709	B-10
D506	B-3	IC101	D-6	IC701	C-10	Q102	C-7	Q111	D-6	Q504	B-2	Q512	C-2	Q520	D-7	Q606	D-2	Q702	C-10	Q710	C-10
D507	B-2	IC102	D-6			Q103	C-6	Q112	D-6	Q505	B-2	Q513	D-2	Q521	C-3	Q607	E-2	Q703	C-10	Q711	D-9

6-3. SCHEMATIC DIAGRAM – AUDIO BOARD (1/4) –

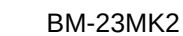


6-4. SCHEMATIC DIAGRAM – AUDIO BOARD (2/4) – • See page 20 for IC Block Diagrams.

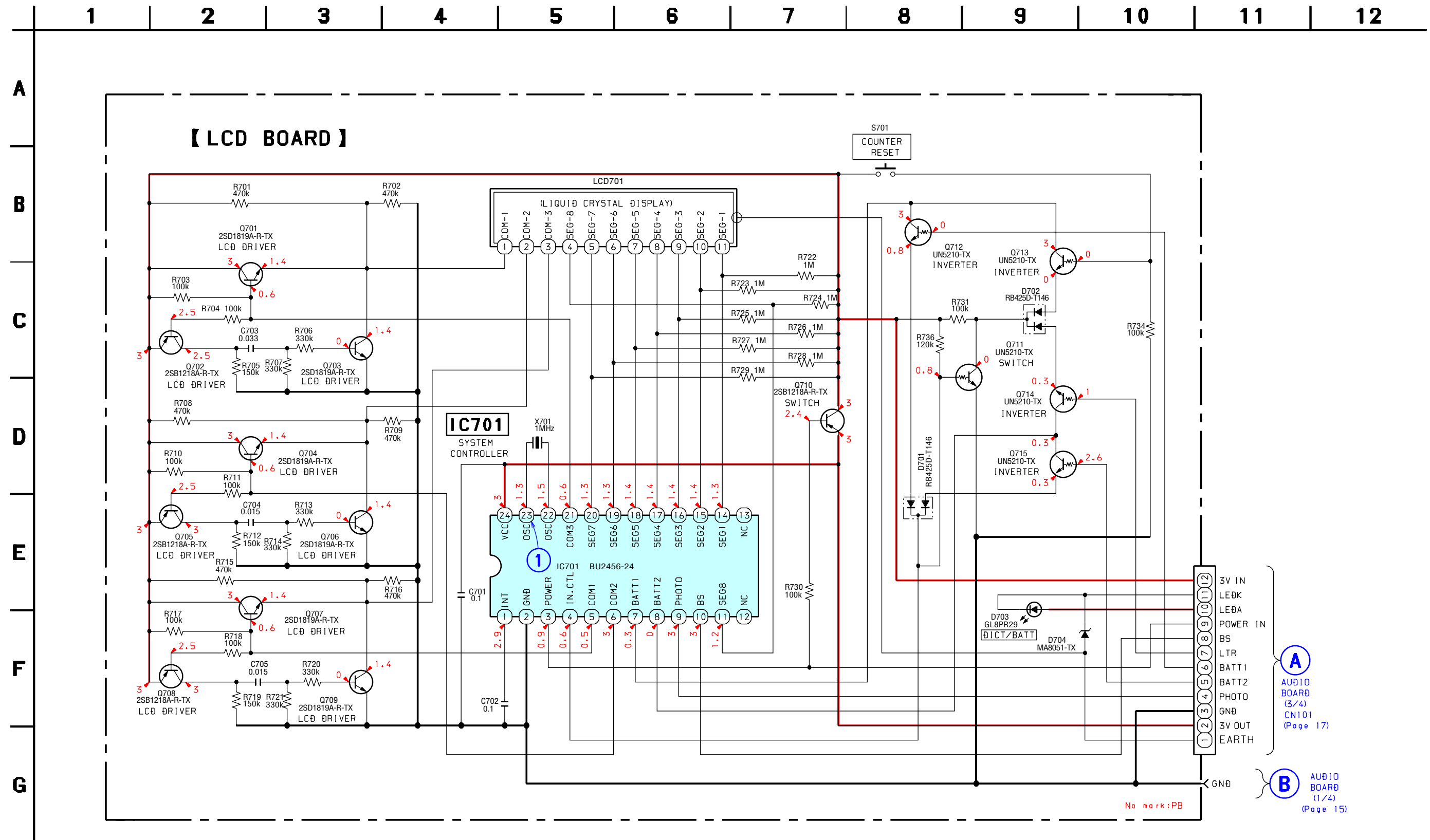


17



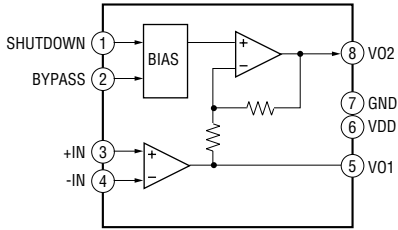


6-7. SCHEMATIC DIAGRAM – LCD BOARD – • See page 12 for Waveform. • See page 21 for IC Pin Function Description.

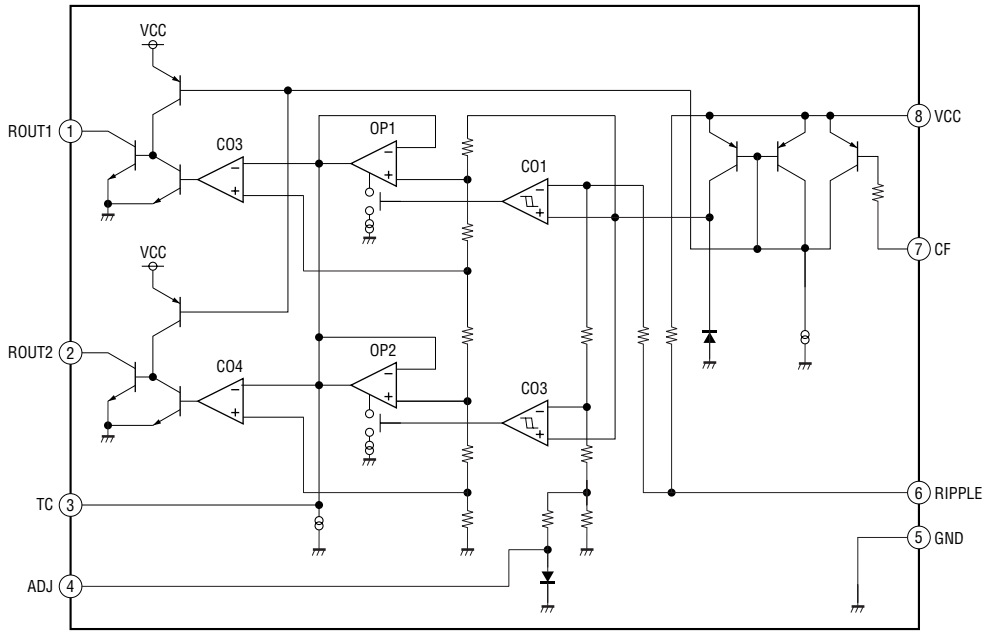


• IC Block Diagrams
— AUDIO Board —

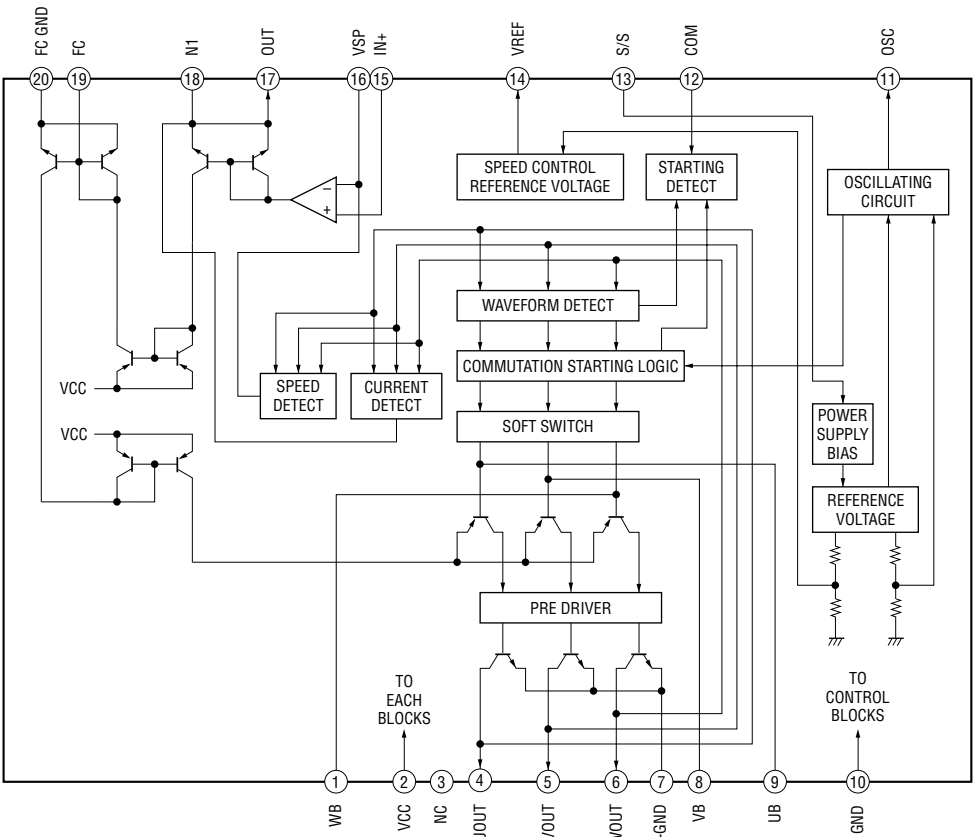
IC102, IC103 MM3111AWLE



IC502 MM1210-XFF



IC601 LB1979VS-TLM-E



• IC Pin Function Description

LCD BOARD IC701 SYSTEM CONTROLLER (BU2456-24)

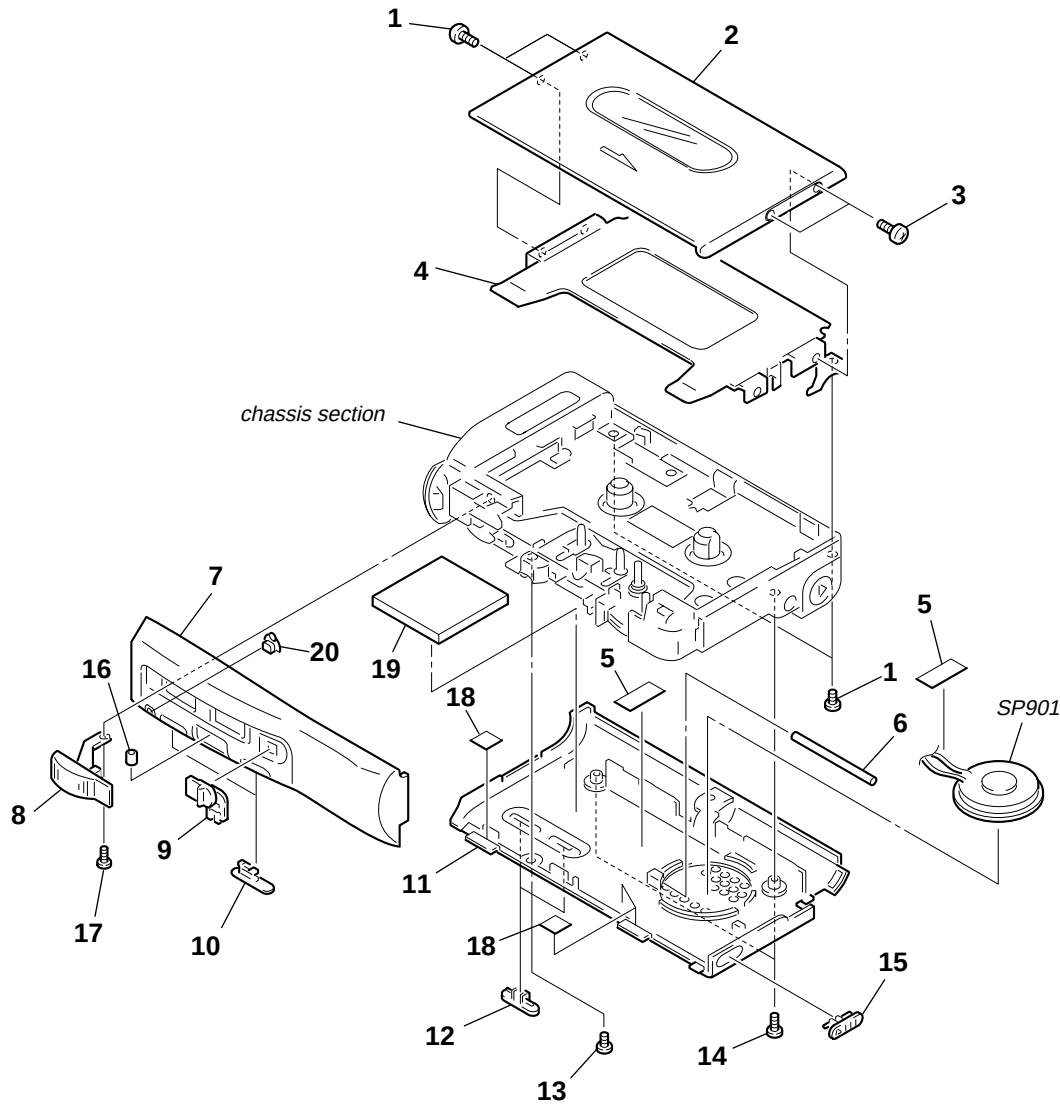
Pin No.	Pin Name	I/O	Description
1	INT	I	Reset terminal
2	GND	—	GND terminal
3	POWER	I	1. When POWER IN becomes level “L”, UP counter, BATT, or LTR is displayed according to PHOTO IN change. 2. When POWER IN becomes level “H”, the HALT state is set, displaying is stopped, and the detection of all inputs are also stopped.
4	IN CTL	O	Rc/Rd input control terminal
5	COM1	O	COM 1 First digit (first digit from the right)
6	COM2	O	COM 2 Second digit (second digit from the right)
7	BATT1 (RESET)	I	BATT IN 1. When BATT1=H, and BATT2=L, “  ” is displayed. 2. When BATT1=H, and BATT2=L, “  ” is displayed. 3. When BATT1=H, and BATT2=L, “  ” is displayed. 4. When BATT1=H, and BATT2=L, “  ” is displayed. 5. BATT IN will not be accepted during HALT. RESET IN
8	BATT2 (LTR)	I	1. Forces the counter to display “888” while it is displaying. 2. Set the RAM of the counter to display “888” while the LTR is displayed. 3. RESET IN will not be accepted during HALT. LTR IN 1. The counter is stopped if it is displaying and “L” is displayed. 2. Even if “L” is displayed, the counter will operate. 3. LTR IN will not be accepted during HALT.
9	PHOTO	I	1. When the tape is rotated while the tape recorder is operating, photo detection is input. 2. PHOTO IN will not be accepted during HALT.
10	BS	I	1. The DOWN counter is set when L and the UP counter is set when H. 2. BS IN will not be accepted during HALT.
11	SEG8	O	Segment output terminal
12	NC	—	
13	NC	—	
14	SEG1	O	Segment output terminal
15	SEG2	O	Segment output terminal
16	SEG3	O	Segment output terminal
17	SEG4	O	Segment output terminal
18	SEG5	O	Segment output terminal
19	SEG6	O	Segment output terminal
20	SEG7	O	Segment output terminal
21	COM3	O	COM 3 Third digit (third digit from the right)
22	OSC	O	X’tal oscillation terminal (1MHz)
23	OSC	I	X’tal oscillation terminal (1MHz)
24	VCC	—	Power supply terminal

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.
- The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

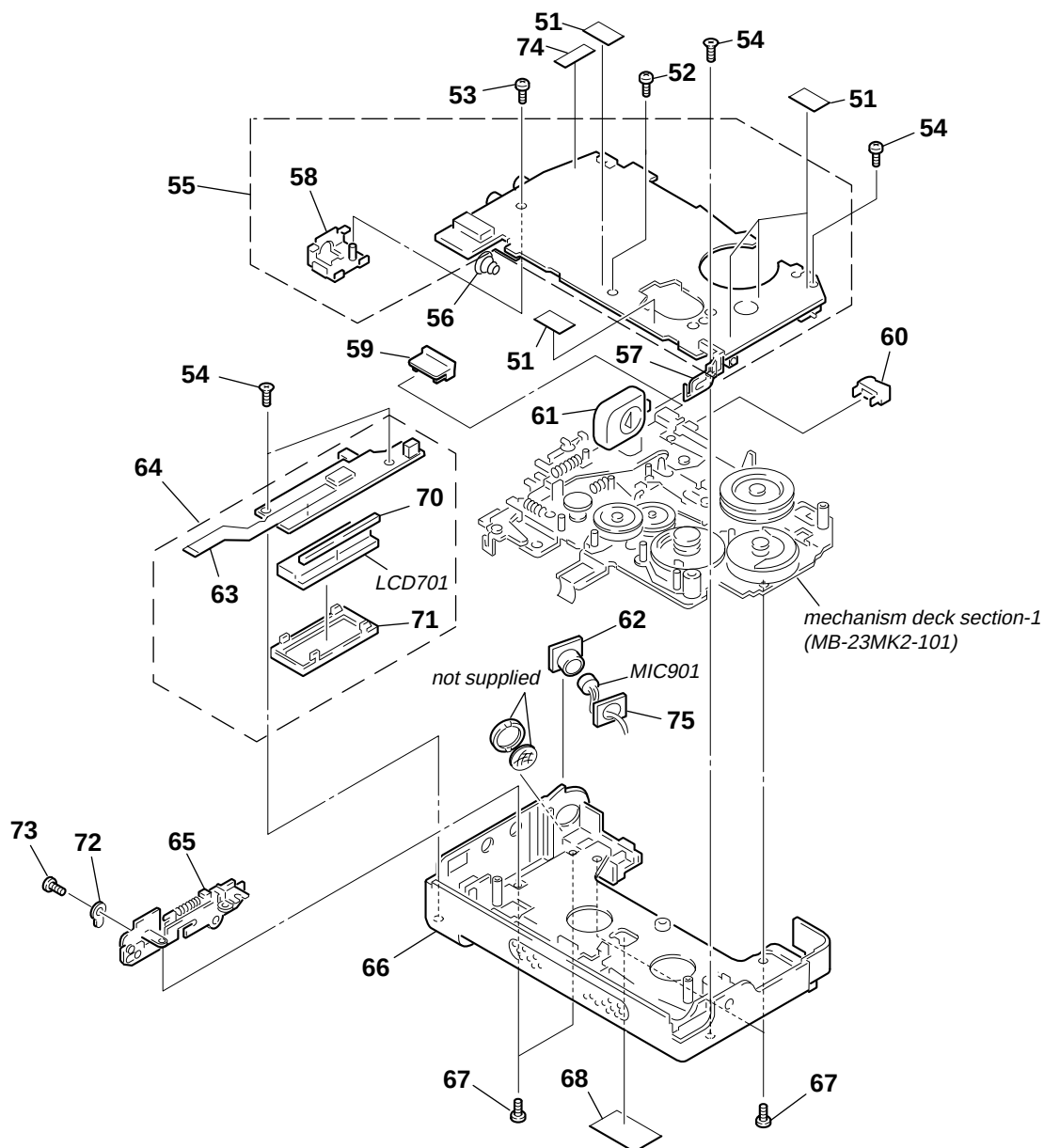
7-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	3-704-197-03	SCREW (M1.4X1.6), LOCKING	
2	X-3367-817-1	PANEL ASSY, CASSETTE	
3	3-704-197-42	SCREW (M1.4X2.2), LOCKING	
4	X-3367-810-1	PANEL ASSY, HOLDER	
5	3-831-441-11	CUSHION, CABINET UPPER 10X7X0.5	
* 6	3-374-741-01	BRACKET (SPEAKER), CONCLUDE	
7	3-909-973-01	PANEL, CONTROL	
8	X-3367-812-1	BUTTON ASSY, CONTROL	
9	3-909-955-01	KNOB (HOLD)	
10	3-909-954-01	KNOB (A)	
11	X-3367-816-1	CABINET (REAR) ASSY	

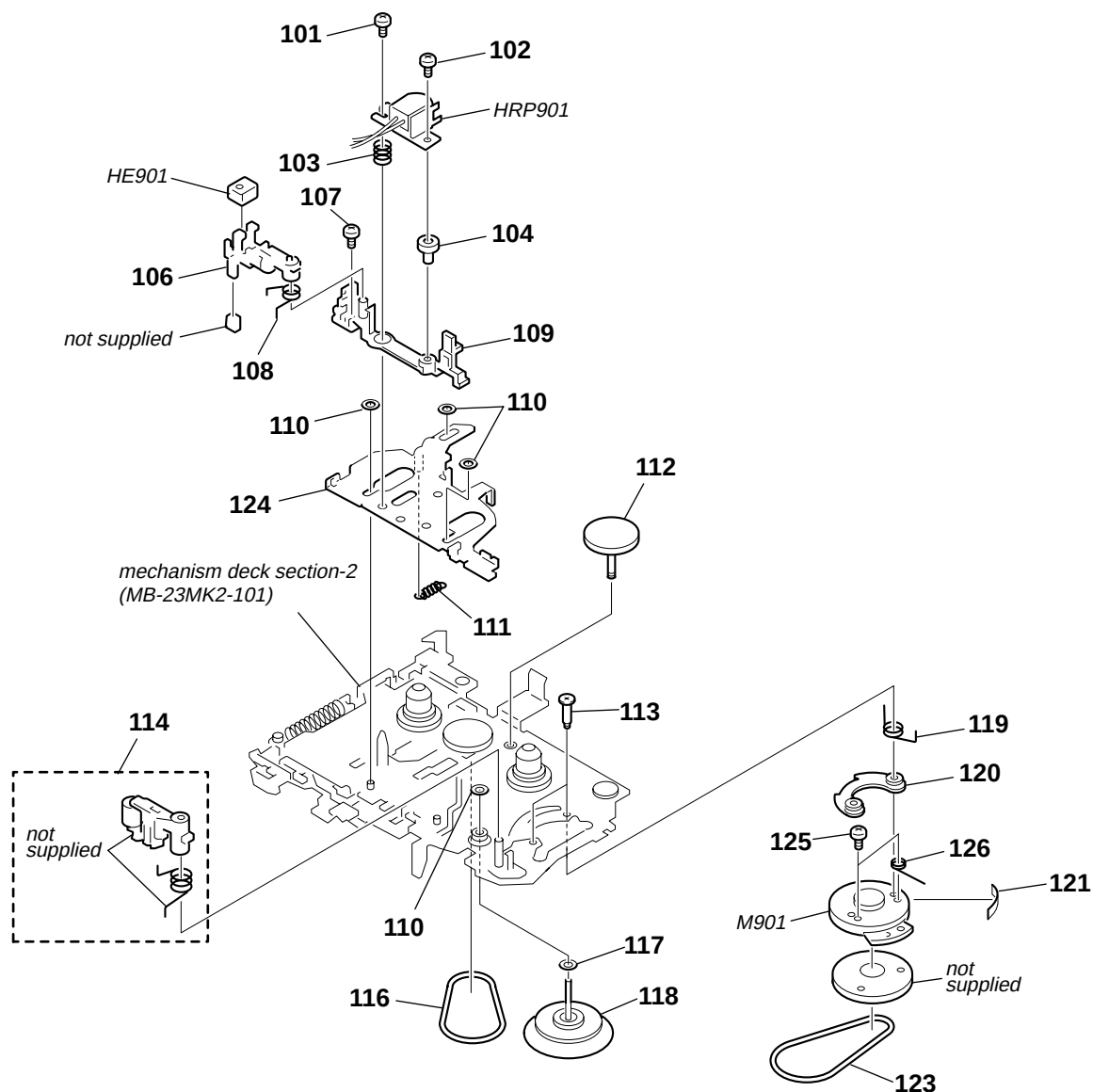
Ref. No.	Part No.	Description	Remark
12	3-909-957-01	KNOB (VOR)	
13	3-366-890-51	SCREW (M1.4X6.0)	
14	3-318-203-98	SCREW (B1.7X11), TAPPING	
15	3-365-623-01	KNOB (DOLBY)	
16	3-347-746-11	COLLAR	
17	3-365-630-02	SCREW (M1.4)	
18	4-017-441-01	CUSHION (B)	
19	3-915-246-01	CUSHION	
20	3-909-956-01	BUTTON (E-IND)	
SP901	1-504-691-13	SPEAKER (3.6cm)	

7-2. CHASSIS SECTION



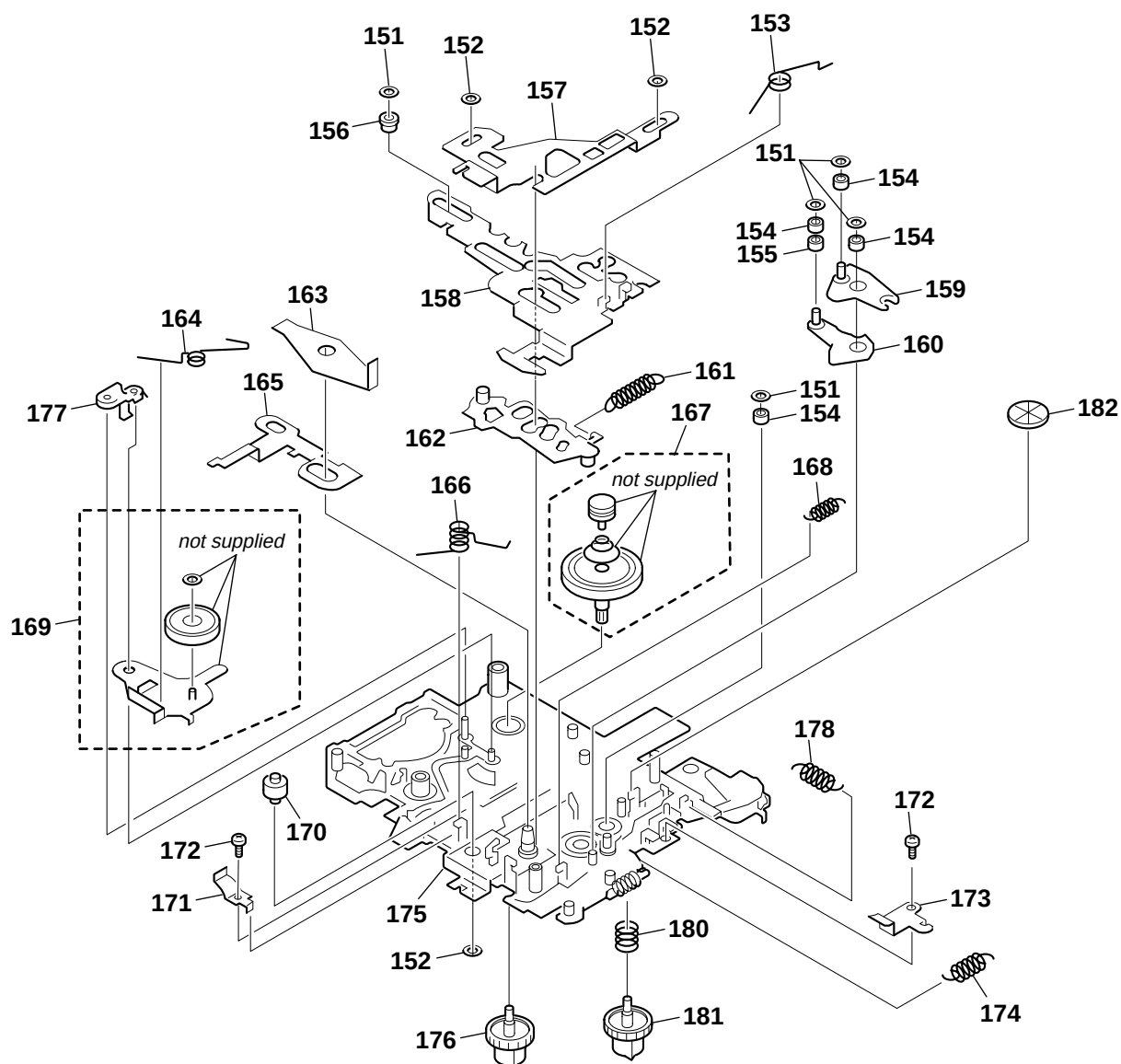
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-831-441-11	CUSHION, CABINET UPPER 10X7X0.5		65	X-3367-814-1	PLATE, LOCK ASSY	
52	3-345-648-81	SCREW (M1.4X3)		66	X-3367-813-1	CABINET (FRONT) ASSY	
53	3-703-502-01	SCREW		67	3-704-197-33	SCREW (M1.4X3.0), LOCKING	
54	3-375-114-61	SCREW		68	3-371-862-01	PLATE, ORNAMENTAL	
55	A-1138-332-A	AUDIO BOARD, COMPLETE		* 70	1-537-724-11	CONDUCTIVE BOARD, CONNECTION	
56	3-909-950-01	SPRING, BATTERY COIL		71	3-911-887-01	HOLDER, LCD	
57	X-3367-811-1	TERMINAL BOARD ASSY		72	7-623-505-01	LUG, 2	
* 58	X-3363-574-1	HOLDER ASSY, JACK		73	3-891-132-00	SCREW (M1.7X2.0), SPECIAL HEAD	
59	3-909-952-01	BUTTON (EJECT)		74	4-017-441-01	CUSHION (B)	
60	3-909-951-01	BUTTON (FF)		* 75	3-914-611-01	HOLDER, MICROPHONE	
61	3-909-953-01	LID, BATTERY CASE		LCD701	1-810-464-11	DISPLAY PANEL, LIQUID CRYSTAL	
62	3-320-975-01	CUSHION (A), MICROPHONE		MIC901	1-542-080-11	MICROPHONE, BUILT-IN	
63	1-652-024-11	PC BOARD, FLEXIBLE					
64	A-1139-877-A	LCD BOARD, COMPLETE					

7-3. MECHANISM DECK SECTION-1 (MB-23MK2-101)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-375-135-02	SCREW (1.4), SPECIAL		117	3-701-437-51	WASHER	
102	3-376-177-02	SCREW (M1.4X3.8)		118	X-3369-923-1	WHEEL ASSY (ZNDC), CAPSTAN	
103	3-371-882-01	SPRING (AZIMUTH), COMPRESSION		119	3-371-822-01	SPRING (PINCH LEVER), TORSION	
104	3-375-045-01	COLLAR (HEAD)		* 120	3-371-885-01	CUSHION, MOTOR	
106	3-371-851-06	BRACKET (E HEAD)		121	3-831-441-11	CUSHION, CABINET UPPER 10X7X0.5	
107	3-704-197-11	SCREW (M1.4X2.0), LOCKING		123	3-371-869-01	BELT (CAPSTAN)	
108	3-023-711-01	SPRING (E HEAD), TORSION		124	X-3367-821-2	CHASSIS (HEAD) ASSY	
109	3-371-839-11	BRACKET (HEAD)		125	3-234-449-05	SCREW (M1.4)	
110	3-321-483-11	RING, RETAINING		126	3-374-119-02	SPRING (GROUND), TORSION	
111	3-910-002-01	SPRING, TENSION		HRP901	1-500-126-12	HEAD, MAGNETIC (RECORD/PLAYBACK)	
112	3-371-854-01	GEAR (FF)		M901	1-698-452-14	MOTOR, DC	
113	3-371-886-02	SCREW (MOTOR), STEP		HE901	1-543-876-11	HEAD (ERASE)	
114	X-3363-573-1	PINCH ROLLER ASSY					
116	3-924-682-01	BELT (FR)					

7-4. MECHANISM DECK SECTION-2 (MB-23MK2-101)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-315-384-11	WASHER, STOPPER		167	X-3367-818-1	TABLE ASSY, FELT	
152	3-321-483-11	RING, RETAINING		168	3-910-004-01	SPRING, TENSION	
153	3-910-006-01	SPRING, TORSION		169	X-3363-568-1	LEVER ASSY, IDLER	
154	3-909-999-01	ROLLER (C)		170	3-909-996-01	SHAFT (CHASSIS-D)	
155	3-909-997-01	ROLLER (A)					
156	3-909-998-01	ROLLER (B)		* 171	3-915-376-01	SPRING (LOCK), LEAF	
* 157	3-909-985-01	LEVER (EJECT)		172	3-704-197-03	SCREW (M1.4X1.6), LOCKING	
* 158	3-909-987-01	LEVER (SLIDE)		* 173	3-909-986-02	HOLDER (SPRING)	
159	X-3367-822-2	LEVER (REC 2) ASSY		174	3-910-003-01	SPRING, TENSION	
160	X-3367-823-2	LEVER (CL) ASSY		175	X-3367-819-8	CHASSIS ASSY	
161	3-910-005-01	SPRING, TENSION		176	3-371-865-01	GEAR (T REEL)	
162	X-3367-820-3	LEVER (EJECT) ASSY		177	3-914-860-01	STOPPER (IDLER)	
* 163	3-909-995-02	LEVER (SW)		178	3-911-371-01	SPRING, TENSION	
164	3-910-007-01	SPRING (IDLER), TORSION		180	3-371-881-01	SPRING (B.T), COMPRESSION	
* 165	3-909-988-02	LEVER (LOCK)		181	3-371-866-01	GEAR (S REEL)	
166	3-371-872-01	SPRING (FR), TORSION		182	3-910-000-01	REFLECTOR (REEL)	

SECTION 8 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 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.
- CAPACITORS
uF: μ F

- COILS
uH: μ H
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable
- SEMICONDUCTORS
In each case, u: μ , for example:
uA. . : μ A. ., uPA. . : μ PA. .,
uPB. . : μ PB. ., uPC. . : μ PC. .,
uPD. . : μ PD. .
- Accessories are given in the last of this parts list.

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

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark				Ref. No.	Part No.	Description	Remark			
	A-1138-332-A	AUDIO BOARD, COMPLETE *****					C141	1-126-246-11	ELECT CHIP	220uF	20%	4V	
							C144	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
							C146	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
	3-703-929-01	SPACER (A)					C147	1-126-246-11	ELECT CHIP	220uF	20%	4V	
	3-331-066-11	SHEET (B), INSULATING					C148	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
	3-345-648-01	SCREW (M1.4X3)					C150	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
	3-831-441-99	SPACER					C151	1-126-209-11	ELECT CHIP	100uF	20%	4V	
*	3-914-610-01	SHEET (PC BOARD)					C152	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
		< CAPACITOR >					C153	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C1	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V		C156	1-135-208-11	TANTAL. CHIP	1uF	20%	10V	
C2	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V		C157	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C3	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V		C158	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C101	1-135-070-00	TANTAL. CHIP	0.1uF	20%	35V		C159	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C102	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C160	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C103	1-104-752-11	TANTAL. CHIP	33uF	20%	4V		C161	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C104	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V		C162	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C105	1-135-145-11	TANTAL. CHIP	0.47uF	20%	35V		C163	1-115-156-11	CERAMIC CHIP	1uF		10V	
C106	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C164	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C107	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V		C165	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V	
C108	1-126-208-21	ELECT CHIP	47uF	20%	4V		C501	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C109	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V		C502	1-135-149-21	TANTAL. CHIP	2.2uF	20%	10V	
C110	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V		C503	1-216-851-11	METAL CHIP	330K	5%	1/10W	
C111	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		C504	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C112	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C505	1-104-912-11	TANTAL. CHIP	3.3uF	20%	4V	
C113	1-135-072-21	TANTAL. CHIP	0.22uF	20%	35V		C506	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C114	1-109-982-11	CERAMIC CHIP	1uF	10%	10V		C507	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C115	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		C508	1-135-201-11	TANTAL. CHIP	10uF	20%	4V	
C116	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C509	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C118	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		C510	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C119	1-115-156-11	CERAMIC CHIP	1uF		10V		C511	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C121	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C512	1-104-752-11	TANTAL. CHIP	33uF	20%	4V	
C122	1-164-346-11	CERAMIC CHIP	1uF		16V		C513	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C123	1-115-156-11	CERAMIC CHIP	1uF		10V		C514	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C124	1-127-574-91	TANTAL. CHIP	22uF	20%	6.3V		C515	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C125	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		C516	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C126	1-135-210-11	TANTAL. CHIP	4.7uF	20%	10V		C517	1-135-201-11	TANTAL. CHIP	10uF	20%	4V	
C127	1-135-149-21	TANTAL. CHIP	2.2uF	20%	10V		C519	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C128	1-126-209-11	ELECT CHIP	100uF	20%	4V		C520	1-126-246-11	ELECT CHIP	220uF	20%	4V	
C129	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C521	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C131	1-131-862-91	TANTAL. CHIP	47uF	20%	4V		C522	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C136	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C523	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C137	1-216-864-11	SHORT CHIP	0				C525	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V	
C138	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		C526	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V	
C139	1-135-208-11	TANTAL. CHIP	1uF	20%	10V		C528	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C140	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C601	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C602	1-104-847-11	TANTAL. CHIP	22uF 20% 4V	JR203	1-216-864-11	SHORT CHIP	0
C603	1-104-847-11	TANTAL. CHIP	22uF 20% 4V	JR204	1-216-296-11	SHORT CHIP	0
C606	1-164-346-11	CERAMIC CHIP	1uF 16V	JR205	1-216-864-11	SHORT CHIP	0
C607	1-164-346-11	CERAMIC CHIP	1uF 16V	JR901	1-216-864-11	SHORT CHIP	0
C611	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V			< COIL >	
C613	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	L501	1-412-064-11	INDUCTOR	100uH
C614	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V			< PHOTO INTERRUPTER >	
C615	1-135-201-11	TANTAL. CHIP	10uF 20% 4V	PH501	8-719-017-54	DIODE NJ5161K-F10-A	
C616	1-127-715-91	CERAMIC CHIP	0.22uF 10% 16V			< TRANSISTOR >	
C617	1-165-176-11	CERAMIC CHIP	0.047uF 10% 16V	Q1	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
C618	1-125-889-91	CERAMIC CHIP	2.2uF 10% 10V	Q2	8-729-402-55	TRANSISTOR	2SB1218A-R-TX
C619	1-125-891-11	CERAMIC CHIP	0.47uF 10% 10V	Q3	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
		< CONNECTOR >		Q4	8-729-403-17	TRANSISTOR	XN1215-TX
CN101	1-750-338-51	CONNECTOR, FFC/FPC (ZIF) 12P		Q5	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
CN102	1-580-372-43	JACK, DC (POLARITY UNIFIED TYPE)		Q101	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
		< DIODE >		Q102	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
D161	8-719-404-50	DIODE MA111-TX		Q103	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
D501	8-719-420-51	DIODE MA729-TX		Q104	8-729-402-55	TRANSISTOR	2SB1218A-R-TX
D502	8-719-420-51	DIODE MA729-TX		Q105	8-729-420-50	TRANSISTOR	UN5215-(TX)
D503	8-719-404-50	DIODE MA111-TX		Q106	8-729-402-55	TRANSISTOR	2SB1218A-R-TX
D504	8-719-404-50	DIODE MA111-TX		Q107	8-729-402-93	TRANSISTOR	UN5214-TX
D505	8-719-404-50	DIODE MA111-TX		Q109	8-729-230-69	TRANSISTOR	2SA1362-G-EL
D506	8-719-420-51	DIODE MA729-TX		Q110	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
D507	8-719-404-50	DIODE MA111-TX		Q111	8-729-402-93	TRANSISTOR	UN5214-TX
D601	8-719-420-51	DIODE MA729-TX		Q112	8-729-402-93	TRANSISTOR	UN5214-TX
		< FERRITE BEAD >		Q161	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
FB901	1-500-329-21	INDUCTOR, FERRITE BEAD		Q162	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
FB902	1-500-329-21	INDUCTOR, FERRITE BEAD		Q163	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
		< IC >		Q501	8-729-402-55	TRANSISTOR	2SB1218A-R-TX
IC101	8-752-089-40	IC CXA2500N-T4		Q502	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
IC102	6-707-089-01	IC MM3111AWLE		Q503	8-729-420-50	TRANSISTOR	UN5215-(TX)
IC103	6-707-089-01	IC MM3111AWLE		Q504	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
IC501	8-759-097-92	IC NJM2100V (TE1)		Q505	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
IC502	8-759-180-33	IC MM1210-XFF		Q506	8-729-402-93	TRANSISTOR	UN5214-TX
IC503	8-759-701-51	IC NJM2072M (TE2)		Q507	8-729-402-96	TRANSISTOR	UN5114-TX
IC504	8-759-493-26	IC XC6371A300PR		Q508	8-729-420-50	TRANSISTOR	UN5215-(TX)
IC601	8-759-638-51	IC LB1979VS-TLM-E		Q509	8-729-420-50	TRANSISTOR	UN5215-(TX)
		< JACK >		Q510	8-729-420-16	TRANSISTOR	XN1214-TX
J101	1-766-156-21	JACK (MIC PLUG IN POWER)		Q511	8-729-402-55	TRANSISTOR	2SB1218A-R-TX
J102	1-766-156-21	JACK (EAR)		Q512	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
		< JUMPER RESISTOR >		Q513	8-729-426-31	TRANSISTOR	XP1214-TXE
JR1	1-216-864-11	SHORT CHIP	0	Q514	8-729-429-44	TRANSISTOR	XP1501-TXE
JR101	1-216-864-11	SHORT CHIP	0	Q515	8-729-420-53	TRANSISTOR	UN5115-(TX)
JR102	1-216-864-11	SHORT CHIP	0	Q516	8-729-429-44	TRANSISTOR	XP1501-TXE
JR105	1-216-864-11	SHORT CHIP	0	Q517	8-729-402-96	TRANSISTOR	UN5114-TX
JR106	1-216-864-11	SHORT CHIP	0	Q518	8-729-403-17	TRANSISTOR	XN1215-TX
JR108	1-216-864-11	SHORT CHIP	0	Q519	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
JR110	1-216-864-11	SHORT CHIP	0	Q520	8-729-402-93	TRANSISTOR	UN5214-TX
JR151	1-216-864-11	SHORT CHIP	0	Q521	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
JR201	1-216-296-11	SHORT CHIP	0	Q522	8-729-402-96	TRANSISTOR	UN5114-TX
JR202	1-216-864-11	SHORT CHIP	0	Q523	8-729-402-32	TRANSISTOR	2SD1819A-R-TX
				Q601	8-729-402-55	TRANSISTOR	2SB1218A-R-TX
				Q602	8-729-420-50	TRANSISTOR	UN5215-(TX)
				Q603	8-729-402-32	TRANSISTOR	2SD1819A-R-TX

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AUDIO

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
Q605	8-729-420-50	TRANSISTOR	UN5215-(TX)			R141	1-216-852-11	METAL CHIP	390K	5%	1/10W
Q606	8-729-402-96	TRANSISTOR	UN5114-TX			R142	1-216-841-11	METAL CHIP	47K	5%	1/10W
Q607	8-729-426-36	TRANSISTOR	XP1215-TXE								
Q608	8-729-420-50	TRANSISTOR	UN5215-(TX)			R144	1-216-841-11	METAL CHIP	47K	5%	1/10W
Q610	8-729-402-93	TRANSISTOR	UN5214-TX			R145	1-216-814-11	METAL CHIP	270	5%	1/10W
						R150	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
Q611	8-729-402-93	TRANSISTOR	UN5214-TX			R151	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
Q612	8-729-402-55	TRANSISTOR	2SB1218A-R-TX			R152	1-216-800-11	METAL CHIP	18	5%	1/10W
Q613	8-729-420-50	TRANSISTOR	UN5215-(TX)								
		< RESISTOR >									
R1	1-216-851-11	METAL CHIP	330K	5%	1/10W	R153	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2	1-216-839-11	METAL CHIP	33K	5%	1/10W	R154	1-216-805-11	METAL CHIP	47	5%	1/10W
R3	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R155	1-216-819-11	METAL CHIP	680	5%	1/10W
R4	1-216-839-11	METAL CHIP	33K	5%	1/10W	R156	1-216-809-11	METAL CHIP	100	5%	1/10W
R6	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R157	1-216-837-11	METAL CHIP	22K	5%	1/10W
R7	1-216-845-11	METAL CHIP	100K	5%	1/10W	R158	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R8	1-216-845-11	METAL CHIP	100K	5%	1/10W	R159	1-216-812-11	METAL CHIP	180	5%	1/10W
R9	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R160	1-216-833-11	METAL CHIP	10K	5%	1/10W
R10	1-216-851-11	METAL CHIP	330K	5%	1/10W	R161	1-216-845-11	METAL CHIP	100K	5%	1/10W
R11	1-216-807-11	METAL CHIP	68	5%	1/10W	R162	1-216-833-11	METAL CHIP	10K	5%	1/10W
R50	1-216-832-11	METAL CHIP	8.2K	5%	1/10W	R163	1-216-850-11	METAL CHIP	270K	5%	1/10W
R100	1-216-864-11	SHORT CHIP	0			R164	1-216-826-11	METAL CHIP	2.7K	5%	1/10W
R101	1-216-824-11	METAL CHIP	1.8K	5%	1/10W	R165	1-216-814-11	METAL CHIP	270	5%	1/10W
R102	1-216-830-11	METAL CHIP	5.6K	5%	1/10W	R166	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R103	1-216-815-11	METAL CHIP	330	5%	1/10W	R167	1-216-813-11	METAL CHIP	220	5%	1/10W
R105	1-216-821-11	METAL CHIP	1K	5%	1/10W	R168	1-216-801-11	METAL CHIP	22	5%	1/10W
R106	1-216-833-11	METAL CHIP	10K	5%	1/10W	R169	1-216-837-11	METAL CHIP	22K	5%	1/10W
R107	1-216-821-11	METAL CHIP	1K	5%	1/10W	R170	1-216-857-11	METAL CHIP	1M	5%	1/10W
R108	1-216-809-11	METAL CHIP	100	5%	1/10W	R171	1-216-845-11	METAL CHIP	100K	5%	1/10W
R109	1-216-817-11	METAL CHIP	470	5%	1/10W	R501	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R110	1-216-808-11	METAL CHIP	82	5%	1/10W	R502	1-216-845-11	METAL CHIP	100K	5%	1/10W
R111	1-216-840-11	METAL CHIP	39K	5%	1/10W	R503	1-216-845-11	METAL CHIP	100K	5%	1/10W
R112	1-216-841-11	METAL CHIP	47K	5%	1/10W	R504	1-216-843-11	METAL CHIP	68K	5%	1/10W
R113	1-216-821-11	METAL CHIP	1K	5%	1/10W	R505	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
R114	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R506	1-216-841-11	METAL CHIP	47K	5%	1/10W
R115	1-216-819-11	METAL CHIP	680	5%	1/10W	R507	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R116	1-216-837-11	METAL CHIP	22K	5%	1/10W	R508	1-218-713-11	METAL CHIP	7.5K	0.5%	1/10W
R117	1-216-815-11	METAL CHIP	330	5%	1/10W	R509	1-218-716-11	METAL CHIP	10K	0.5%	1/10W
R118	1-216-838-11	METAL CHIP	27K	5%	1/10W	R510	1-216-845-11	METAL CHIP	100K	5%	1/10W
R119	1-216-851-11	METAL CHIP	330K	5%	1/10W	R511	1-218-296-11	METAL CHIP	75K	5%	1/10W
R120	1-216-821-11	METAL CHIP	1K	5%	1/10W	R512	1-216-804-11	METAL CHIP	39	5%	1/10W
R121	1-216-817-11	METAL CHIP	470	5%	1/10W	R513	1-216-851-11	METAL CHIP	330K	5%	1/10W
R122	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R514	1-216-833-11	METAL CHIP	10K	5%	1/10W
R123	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R515	1-216-833-11	METAL CHIP	10K	5%	1/10W
R124	1-216-801-11	METAL CHIP	22	5%	1/10W	R516	1-216-845-11	METAL CHIP	100K	5%	1/10W
R125	1-216-833-11	METAL CHIP	10K	5%	1/10W	R517	1-216-845-11	METAL CHIP	100K	5%	1/10W
R126	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R519	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R127	1-216-134-00	RES-CHIP	2.2	5%	1/8W	R520	1-216-833-11	METAL CHIP	10K	5%	1/10W
R130	1-216-845-11	METAL CHIP	100K	5%	1/10W	R521	1-216-846-11	METAL CHIP	120K	5%	1/10W
R131	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R522	1-216-817-11	METAL CHIP	470	5%	1/10W
R132	1-216-821-11	METAL CHIP	1K	5%	1/10W	R523	1-216-809-11	METAL CHIP	100	5%	1/10W
R133	1-216-841-11	METAL CHIP	47K	5%	1/10W	R524	1-216-835-11	METAL CHIP	15K	5%	1/10W
R134	1-216-853-11	METAL CHIP	470K	5%	1/10W	R526	1-216-851-11	METAL CHIP	330K	5%	1/10W
R135	1-216-864-11	SHORT CHIP	0			R527	1-216-851-11	METAL CHIP	330K	5%	1/10W
R136	1-216-833-11	METAL CHIP	10K	5%	1/10W	R528	1-216-835-11	METAL CHIP	15K	5%	1/10W
R138	1-216-864-11	SHORT CHIP	0			R529	1-216-843-11	METAL CHIP	68K	5%	1/10W
R139	1-216-845-11	METAL CHIP	100K	5%	1/10W	R530	1-216-819-11	METAL CHIP	680	5%	1/10W
R140	1-216-837-11	METAL CHIP	22K	5%	1/10W	R531	1-216-821-11	METAL CHIP	1K	5%	1/10W
						R532	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
						R533	1-216-840-11	METAL CHIP	39K	5%	1/10W

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R535	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	S601	1-570-087-11	SWITCH, SLIDE (FAST PB ◀)	
R536	1-216-840-11	METAL CHIP	39K 5% 1/10W	S602	1-571-277-31	SWITCH, SLIDE (FF)	
R537	1-216-845-11	METAL CHIP	100K 5% 1/10W			< TRANSFORMER >	
R538	1-216-845-11	METAL CHIP	100K 5% 1/10W	T101	1-433-251-00	TRANSFORMER, BIAS OSCILLATOR	
R539	1-216-845-11	METAL CHIP	100K 5% 1/10W			< THERMISTOR >	
R540	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	△TH601	1-803-124-11	THERMISTOR, POSITIVE	
R541	1-216-839-11	METAL CHIP	33K 5% 1/10W			< VARIABLE RESISTOR >	
R542	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	VR101	1-225-294-11	RES, VAR, CARBON 10K	(VOLUME ▶)
R543	1-216-839-11	METAL CHIP	33K 5% 1/10W			*****	
R544	1-216-833-11	METAL CHIP	10K 5% 1/10W		A-1139-877-A	LCD BOARD, COMPLETE	
R545	1-216-843-11	METAL CHIP	68K 5% 1/10W			*****	
R546	1-216-821-11	METAL CHIP	1K 5% 1/10W	*	1-537-724-11	CONDUCTIVE BOARD, CONNECTION	
R547	1-216-833-11	METAL CHIP	10K 5% 1/10W		1-652-024-11	PC BOARD, FLEXIBLE	
R548	1-216-728-11	METAL CHIP	33K 0.5% 1/10W	*	3-592-351-01	PAPER, VIBRATION PROOF (B)	
R549	1-218-717-11	METAL CHIP	11K 0.5% 1/10W		3-831-441-99	SPACER	
R550	1-216-845-11	METAL CHIP	100K 5% 1/10W		3-911-887-01	HOLDER, LCD	
R551	1-216-833-11	METAL CHIP	10K 5% 1/10W			< CAPACITOR >	
R552	1-216-822-11	METAL CHIP	1.2K 5% 1/10W	C701	1-164-360-11	CERAMIC CHIP 0.1uF	16V
R553	1-216-819-11	METAL CHIP	680 5% 1/10W	C702	1-164-360-11	CERAMIC CHIP 0.1uF	16V
R561	1-216-839-11	METAL CHIP	33K 5% 1/10W	C703	1-164-677-11	CERAMIC CHIP 0.033uF	10% 16V
R562	1-216-839-11	METAL CHIP	33K 5% 1/10W	C704	1-164-245-11	CERAMIC CHIP 0.015uF	10% 25V
R602	1-216-833-11	METAL CHIP	10K 5% 1/10W	C705	1-164-245-11	CERAMIC CHIP 0.015uF	10% 25V
R603	1-216-833-11	METAL CHIP	10K 5% 1/10W			< DIODE >	
R604	1-216-851-11	METAL CHIP	330K 5% 1/10W	D701	8-719-991-75	DIODE RB425D-T146	
R605	1-216-839-11	METAL CHIP	33K 5% 1/10W	D702	8-719-991-75	DIODE RB425D-T146	
R606	1-216-845-11	METAL CHIP	100K 5% 1/10W	D703	8-719-047-19	DIODE GL8PR29 (DICT/BATT)	
R607	1-216-801-11	METAL CHIP	22 5% 1/10W	D704	8-719-422-37	DIODE MA8051-TX	
R608	1-216-838-11	METAL CHIP	27K 5% 1/10W			< IC >	
R615	1-216-845-11	METAL CHIP	100K 5% 1/10W	IC701	8-759-281-85	IC BU2456-24	
R616	1-216-843-11	METAL CHIP	68K 5% 1/10W			< LIQUID CRYSTAL DISPLAY >	
R618	1-216-833-11	METAL CHIP	10K 5% 1/10W	LCD701	1-810-464-11	DISPLAY PANEL, LIQUID CRYSTAL	
R625	1-216-833-11	METAL CHIP	10K 5% 1/10W			< TRANSISTOR >	
R631	1-216-857-11	METAL CHIP	1M 5% 1/10W	Q701	8-729-402-32	TRANSISTOR 2SD1819A-R-TX	
R632	1-216-857-11	METAL CHIP	1M 5% 1/10W	Q702	8-729-402-55	TRANSISTOR 2SB1218A-R-TX	
R633	1-216-857-11	METAL CHIP	1M 5% 1/10W	Q703	8-729-402-32	TRANSISTOR 2SD1819A-R-TX	
R635	1-216-841-11	METAL CHIP	47K 5% 1/10W	Q704	8-729-402-32	TRANSISTOR 2SD1819A-R-TX	
R636	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	Q705	8-729-402-55	TRANSISTOR 2SB1218A-R-TX	
R637	1-216-845-11	METAL CHIP	100K 5% 1/10W	Q706	8-729-402-32	TRANSISTOR 2SD1819A-R-TX	
R639	1-216-821-11	METAL CHIP	1K 5% 1/10W	Q707	8-729-402-32	TRANSISTOR 2SD1819A-R-TX	
R640	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	Q708	8-729-402-55	TRANSISTOR 2SB1218A-R-TX	
R642	1-216-832-11	METAL CHIP	8.2K 5% 1/10W	Q709	8-729-402-32	TRANSISTOR 2SD1819A-R-TX	
R645	1-216-828-11	METAL CHIP	3.9K 5% 1/10W	Q710	8-729-402-55	TRANSISTOR 2SB1218A-R-TX	
R646	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	Q711	8-729-420-44	TRANSISTOR UN5210-TX	
		< VARIABLE RESISTOR >		Q712	8-729-420-44	TRANSISTOR UN5210-TX	
RV601	1-238-089-11	RES, ADJ, CERMET	4.7K	Q713	8-729-420-44	TRANSISTOR UN5210-TX	
RV602	1-238-089-11	RES, ADJ, CERMET	4.7K	Q714	8-729-420-44	TRANSISTOR UN5210-TX	
		< SWITCH >		Q715	8-729-420-44	TRANSISTOR UN5210-TX	
S101	1-572-039-11	SWITCH, SLIDE (LISTEN / DCT / STOP)					
S102	1-771-091-21	SWITCH, PUSH (1 KEY) (POWER)					
S103	1-571-275-31	SWITCH, SLIDE (MIC SENS)					
S401	1-771-091-21	SWITCH, PUSH (1 KEY) (BACK SPACE)					
S402	1-771-091-21	SWITCH, PUSH (1 KEY) (FF/BACK SPACE)					
S501	1-570-397-11	SWITCH, SLIDE (CUE/REVIEW)					
S502	1-572-263-31	SWITCH, SLIDE (LOCK ▶)					
S503	1-570-204-21	SWITCH, KEY BOARD (E-INDEX)					
S504	1-571-275-31	SWITCH, SLIDE (VOR)					

BM-23MK2

LCD

Ref. No.	Part No.	Description	Remark		
< RESISTOR >					
R701	1-216-853-11	METAL CHIP	470K	5%	1/10W
R702	1-216-853-11	METAL CHIP	470K	5%	1/10W
R703	1-216-845-11	METAL CHIP	100K	5%	1/10W
R704	1-216-845-11	METAL CHIP	100K	5%	1/10W
R705	1-216-847-11	METAL CHIP	150K	5%	1/10W
R706	1-216-851-11	METAL CHIP	330K	5%	1/10W
R707	1-216-851-11	METAL CHIP	330K	5%	1/10W
R708	1-216-853-11	METAL CHIP	470K	5%	1/10W
R709	1-216-853-11	METAL CHIP	470K	5%	1/10W
R710	1-216-845-11	METAL CHIP	100K	5%	1/10W
R711	1-216-845-11	METAL CHIP	100K	5%	1/10W
R712	1-216-847-11	METAL CHIP	150K	5%	1/10W
R713	1-216-851-11	METAL CHIP	330K	5%	1/10W
R714	1-216-851-11	METAL CHIP	330K	5%	1/10W
R715	1-216-853-11	METAL CHIP	470K	5%	1/10W
R716	1-216-853-11	METAL CHIP	470K	5%	1/10W
R717	1-216-845-11	METAL CHIP	100K	5%	1/10W
R718	1-216-845-11	METAL CHIP	100K	5%	1/10W
R719	1-216-847-11	METAL CHIP	150K	5%	1/10W
R720	1-216-851-11	METAL CHIP	330K	5%	1/10W
R721	1-216-851-11	METAL CHIP	330K	5%	1/10W
R722	1-216-857-11	METAL CHIP	1M	5%	1/10W
R723	1-216-857-11	METAL CHIP	1M	5%	1/10W
R724	1-216-857-11	METAL CHIP	1M	5%	1/10W
R725	1-216-857-11	METAL CHIP	1M	5%	1/10W
R726	1-216-857-11	METAL CHIP	1M	5%	1/10W
R727	1-216-857-11	METAL CHIP	1M	5%	1/10W
R728	1-216-857-11	METAL CHIP	1M	5%	1/10W
R729	1-216-857-11	METAL CHIP	1M	5%	1/10W
R730	1-216-845-11	METAL CHIP	100K	5%	1/10W
R731	1-216-845-11	METAL CHIP	100K	5%	1/10W
R734	1-216-845-11	METAL CHIP	100K	5%	1/10W
R736	1-216-846-11	METAL CHIP	120K	5%	1/10W
< SWITCH >					
S701	1-692-878-11	SWITCH, KEY BOARD (COUNTER RESET)			
< VIBRATOR >					
X701	1-577-306-11	OSCILLATOR, CERAMIC 1MHz			

MISCELLANEOUS					

HE901	1-543-876-11	HEAD (ERASE)			
HRP901	1-500-126-12	HEAD, MAGNETIC (RECORD/PLAYBACK)			
LCD701	1-810-464-11	DISPLAY PANEL, LIQUID CRYSTAL			
M901	1-698-452-14	MOTOR, DC			
MIC901	1-542-080-11	MICROPHONE, BUILT-IN			
SP901	1-504-691-13	SPEAKER (3.6cm)			

ACCESSORIES					

	3-758-326-31	MANUAL, INSTRUCTION (ENGLISH)			
	3-909-958-03	CASE, CARRYING			

MEMO

REVISION HISTORY

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