

TCM-450DV

SERVICE MANUAL

Ver 1.2 2004.07



*US Model
Canadian Model
AEP Model
E Model
Chinese Model
Tourist Model*

Model Name Using Similar Mechanism	New
Tape transport Mechanism Type	MT-450-175

SPECIFICATIONS

Recording system

2-track 1 channel monaural

Speaker

Approx. 3.6 cm (1 $\frac{7}{16}$ in.) dia.

Tape speed

4.8 cm/s (1 $\frac{7}{8}$ ips) or 2.4 cm/s ($\frac{1}{2}$ ips)

Variable range of the tape speed

From approx. +30% to -20% (with REC TIME/PLAY MODE switch at "NORMAL")

Frequency range

250 - 6,300 Hz using normal (TYPE I) cassette
(with REC TIME/PLAY MODE switch at "NORMAL")

Input

Microphone input jack (minijack/ monaural/PLUG IN POWER)
sensitivity 0.2 mV for 3 k Ω or lower impedance microphone

Output

Earphone jack (minijack/ monaural) for 8 - 300 Ω earphone

Power output (at 10 % harmonic distortion)

450 mW

Power requirements

3 V DC, batteries R03 (AAA) x 2/
External DC 3 V power sources

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

Approx. 86.3 x 113.4 x 28.9 mm
(3 $\frac{1}{2}$ x 4 $\frac{1}{2}$ x 1 $\frac{3}{16}$ in.)

Mass (main unit only)

Approx. 173 g (6.2 oz.)

Supplied accessory

Carrying pouch (1)

Design and specifications are subject to change without notice.

CASSETTE-CORDER

SONY®

9-877-551-03
2004G02-1
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Sony Corporation
Personal Audio Company
Published by Sony Engineering Corporation

**SECTION 1
GENERAL**

This section is extracted from instruction manual.

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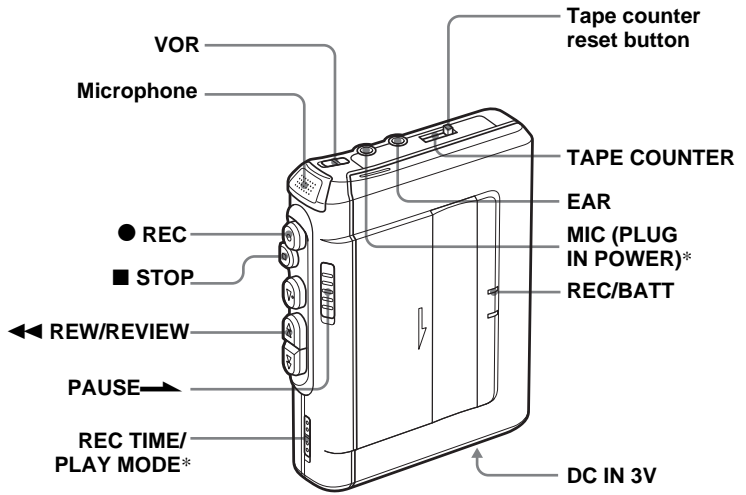
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* The button/jack has a tactile dot.

Flexible Circuit Board Repairing

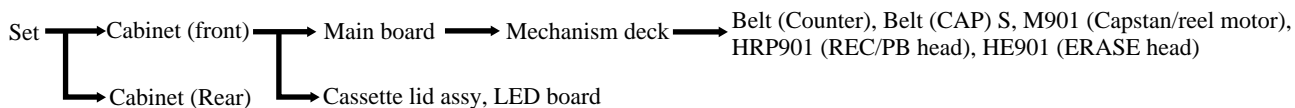
- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

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.

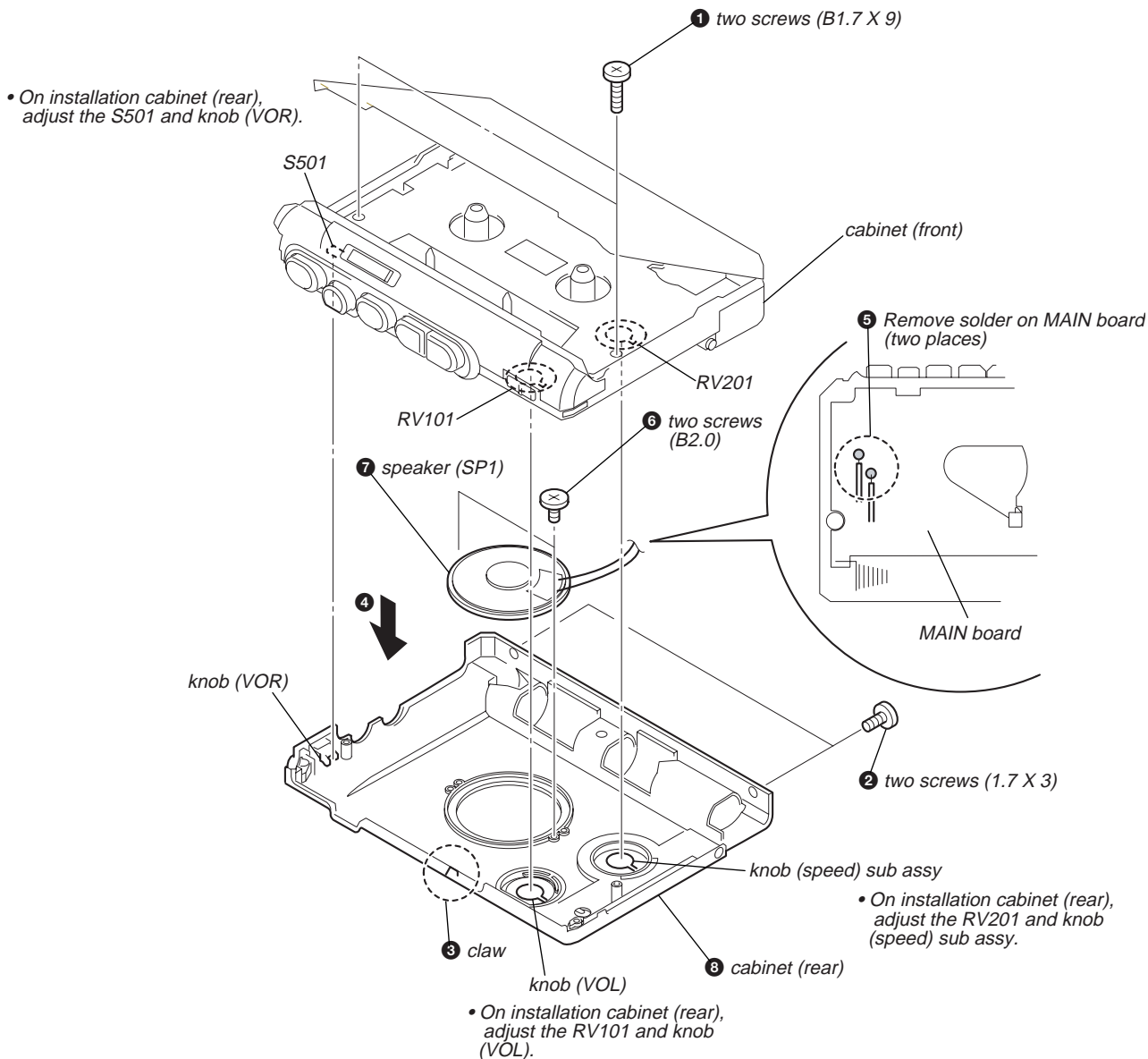
SECTION 2 DISASSEMBLY

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



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

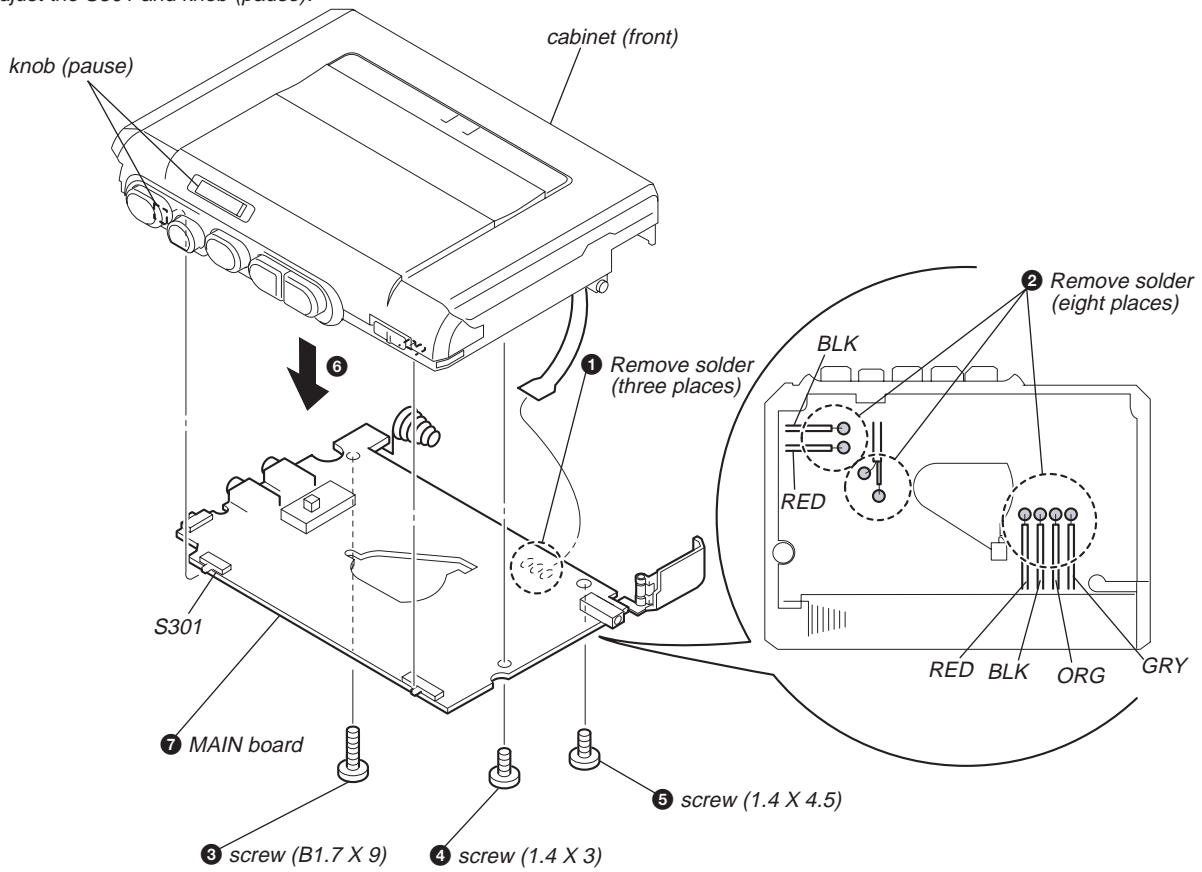
2-1. CABINET (REAR)



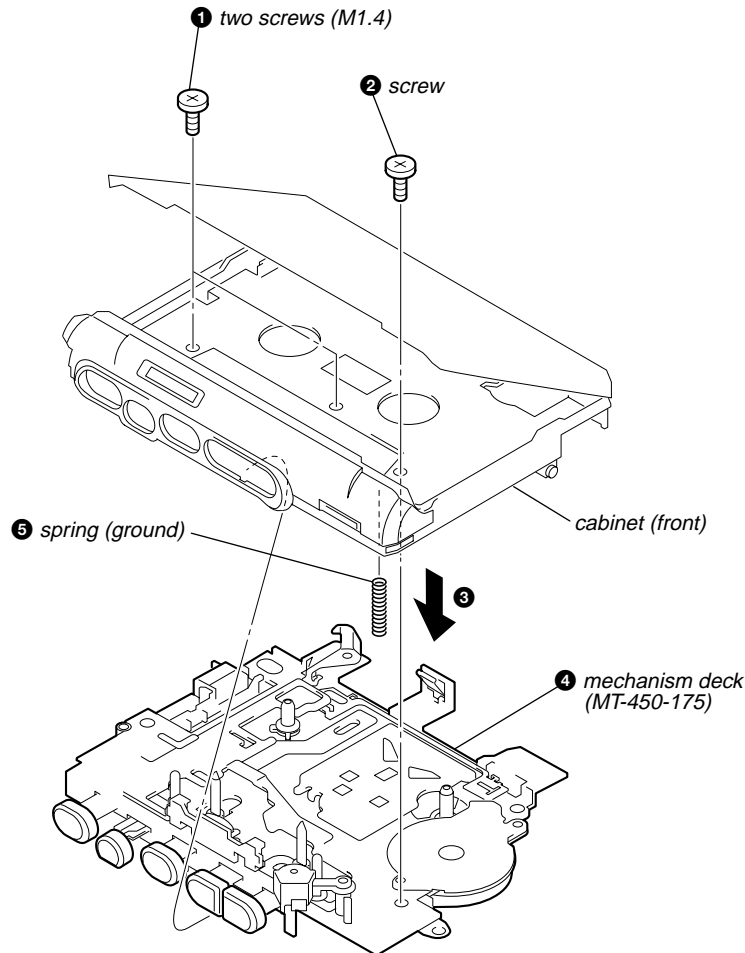
TCM-450DV

2-2. MAIN BOARD

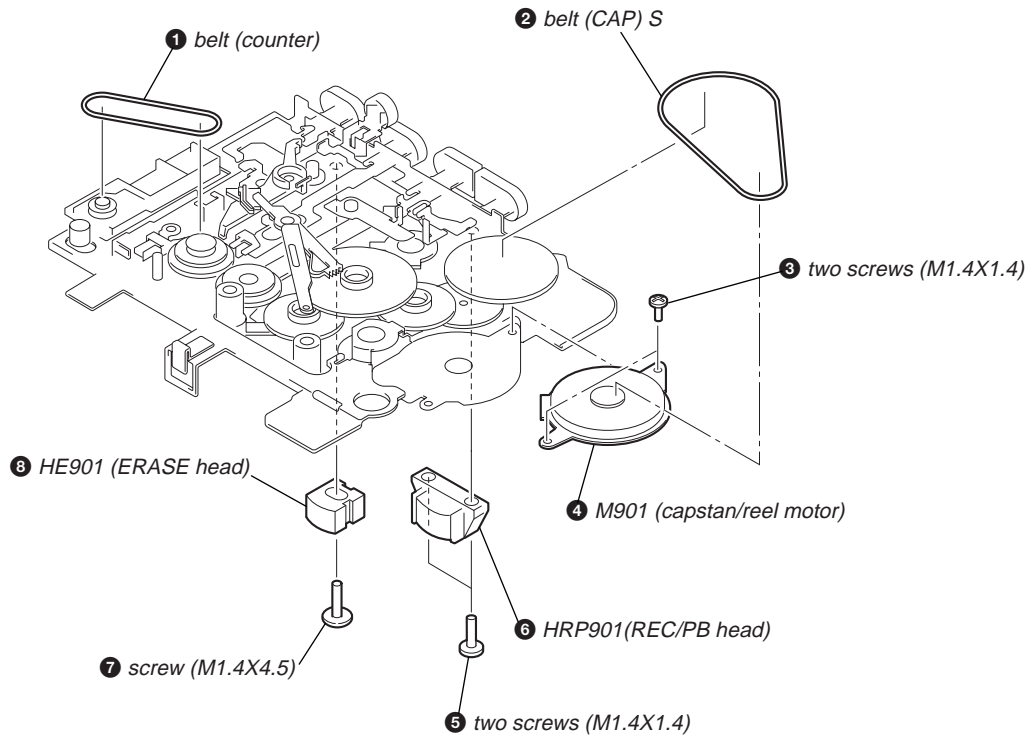
- On installation MAIN board, adjust the S301 and knob (pause).



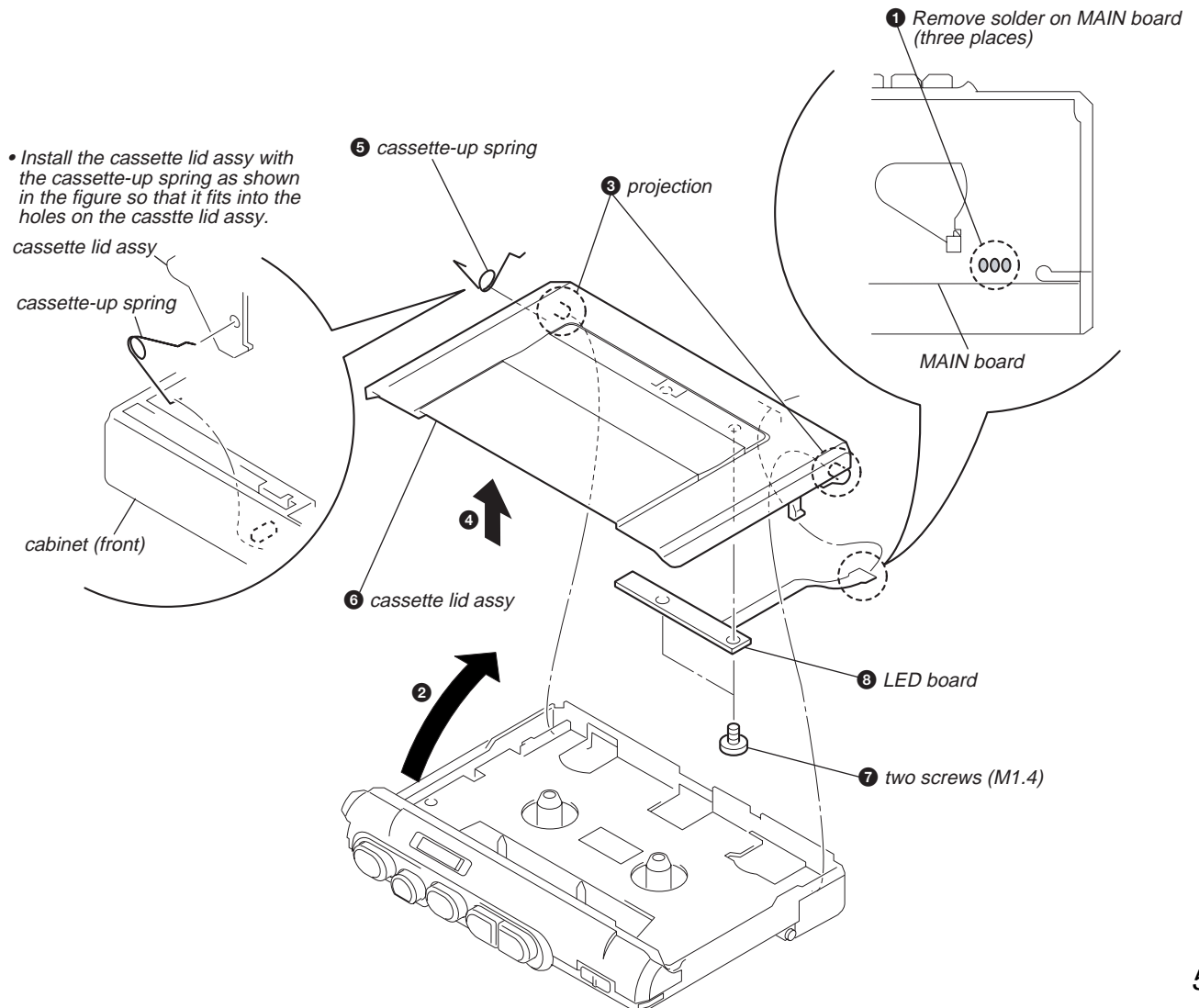
2-3. MECHANISM DECK (MT-450-175)



2-4. BELT (COUNTER), BELT (CAP) S, M901 (CAPSTAN/REEL MOTOR), HRP901 (REC/PB HEAD), HE901 (ERASE HEAD)



2-5. CASSETTE LID ASSY, LED BOARD



SECTION 3 MECHANICAL ADJUSTMENTS

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

record/playback head	pinch roller
erase head	rubber belt
capstan	
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 (2.5 V) unless otherwise noted.

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	1.97 – 3.92mN•m (20 – 40 g•cm) (0.28 – 0.55 oz•inch)
Forward Back Tension		0.05 – 0.49 mN•m (0.5 – 5 g•cm) (0.007 – 0.069 oz•inch)
FF, REW	CQ-201B	more than 4.91 mN•m (more than 50 g•cm) (more than 0.69 oz•inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 50 g (more than 1.76 oz)

SECTION 4 ELECTRICAL ADJUSTMENTS

Setting:

- Supplied voltage: 2.5 V
- Switch and control position

VOL control (RV101)	: mechanical center
PAUSE switch (S301)	: OFF
SPEED CONTROL (RV201)	: center click
VOR switch (S501)	: OFF

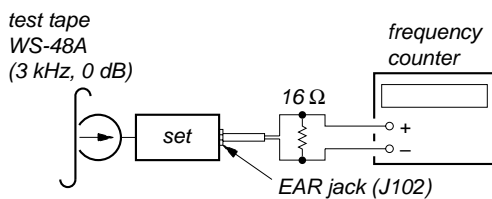
Test Tape

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

0 dB=0.775 V

Tape Speed Adjustment

Mode: playback



Procedure:

1. Set [REC TIME / PLAY MODE] switch (S601) to NORMAL (4.8 cm/s) position, and playback the tape (WS-48A) .
2. Adjust RV601 so that frequency counter reading becomes 3,000 Hz.

Specification values: 2,985 to 3,015 Hz

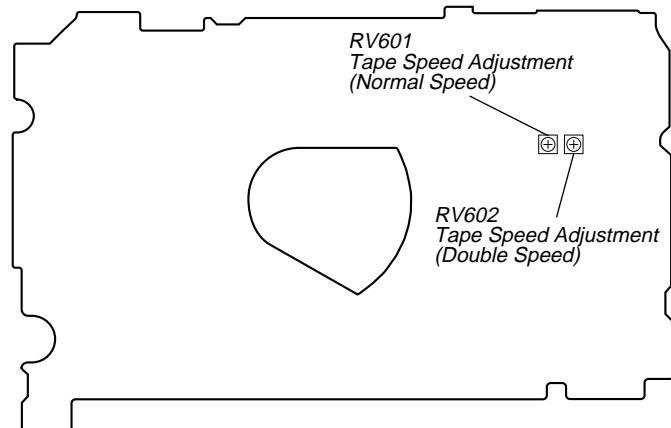
3. Set [REC TIME / PLAY MODE] switch (S601) to DOUBLE (2.4 cm/s) position.
4. Playback the tape from the beginning for two minutes, then adjust RV602 so that frequency counter reading becomes 1,500 Hz.

Specification values: 1,493 to 1,507 Hz

Confirm that deflection of the frequency counter reading between the beginning and the end of tape is within 2% (NORMAL: approx. 60 Hz, DOUBLE: approx. 30 Hz) .

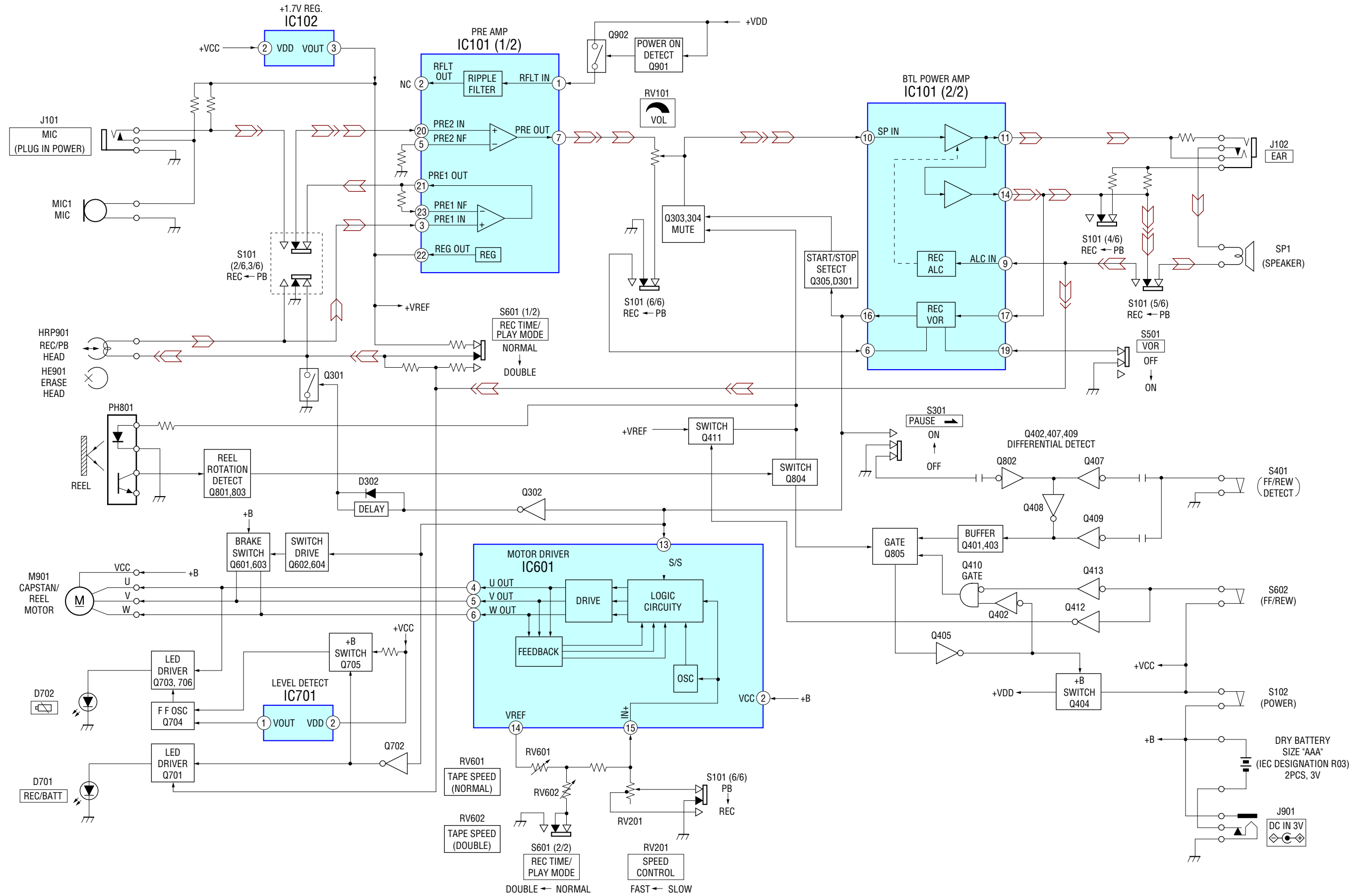
Adjustment Location:

– MAIN BOARD (Side B) –



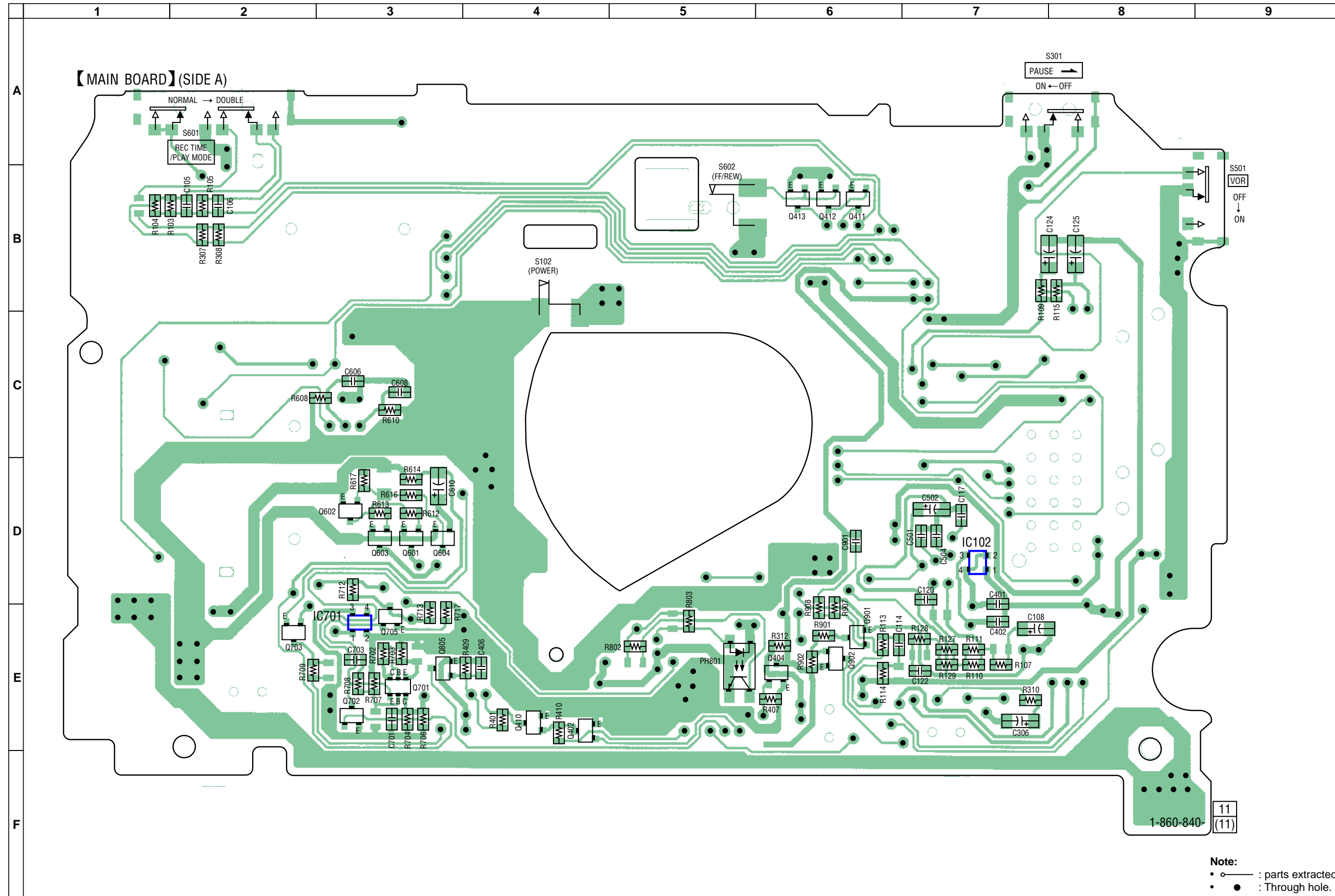
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAMS



• Signal path.
 >>> : PB
 >>>> : REC

5-2. PRINTED WIRING BOARD – MAIN SECTION (SIDE A) –



• Semiconductor Location

Ref. No.	Location
IC102	D-7
IC701	E-3
Q402	E-4
Q410	E-4
Q411	B-6
Q412	B-6
Q413	B-6
Q601	D-3
Q602	D-3
Q603	D-3
Q604	D-3
Q701	E-3
Q702	E-3
Q703	E-2
Q705	E-3
Q805	E-3
Q901	E-6
Q902	E-6

11
1-860-840
(11)

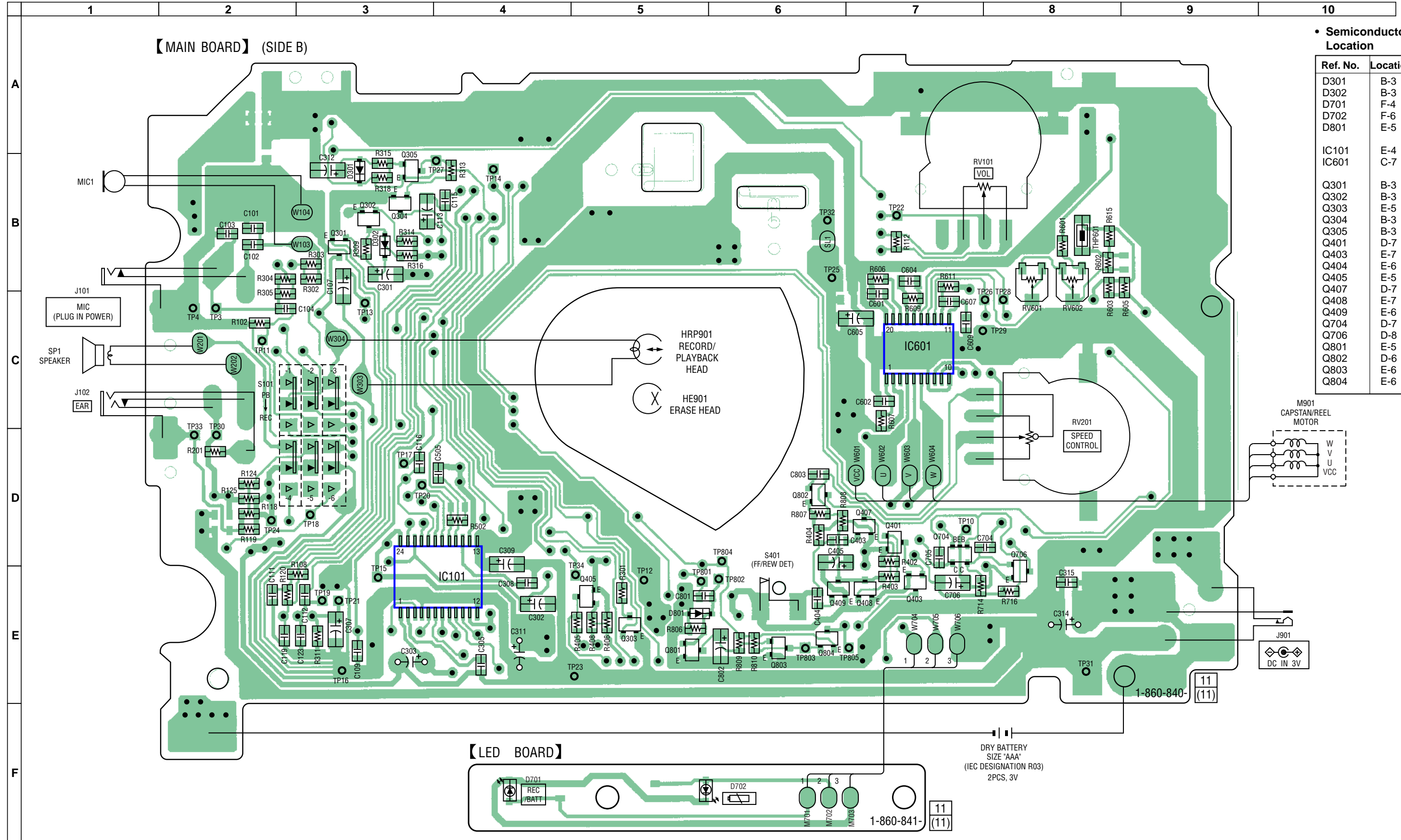
Note:

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

Caution:

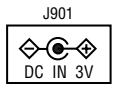
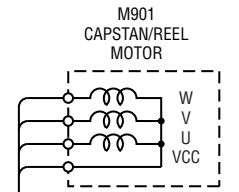
Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
 Parts face side: Parts on the parts face side seen from the parts face are indicated.

PRINTED WIRING BOARD – MAIN SECTION (SIDE B) –

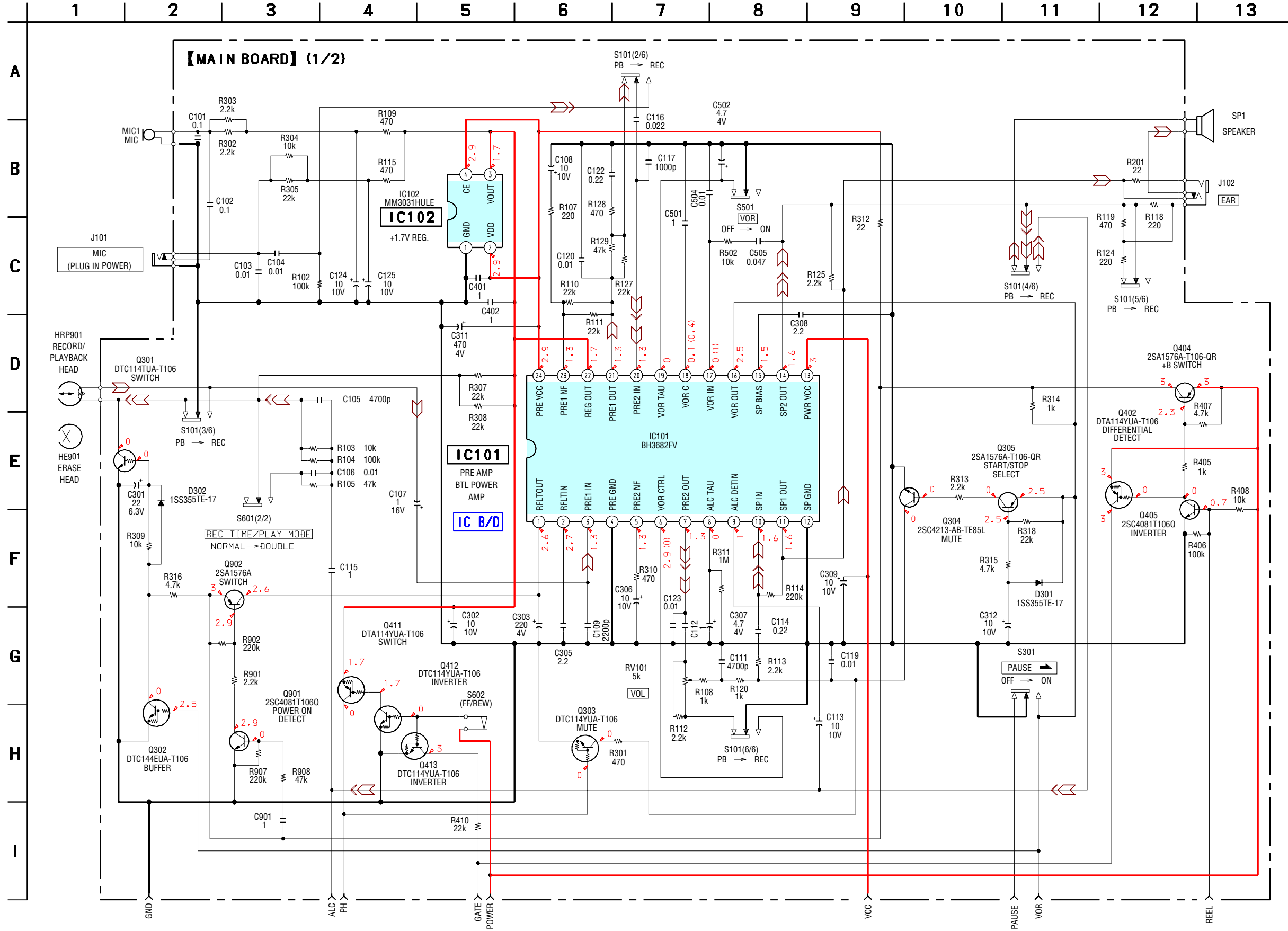


• Semiconductor Location

Ref. No.	Location
D301	B-3
D302	B-3
D701	F-4
D702	F-6
D801	E-5
IC101	E-4
IC601	C-7
Q301	B-3
Q302	B-3
Q303	E-5
Q304	B-3
Q305	B-3
Q401	D-7
Q403	E-7
Q404	E-6
Q405	E-5
Q407	D-7
Q408	E-7
Q409	E-6
Q704	D-7
Q706	D-8
Q801	E-5
Q802	D-6
Q803	E-6
Q804	E-6



5-3. SCHEMATIC DIAGRAM – MAIN SECTION (1/2) –



1
MAIN BOARD (2/2)
(Page 11)

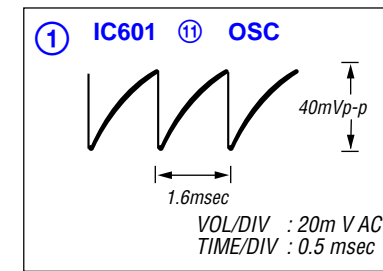
TCM-450DV

Note on schematic diagrams

- All capacitors are in μF unless otherwise noted. pF: μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in W and $\frac{1}{4}$ W or less unless otherwise specified.
- : B+ Line.
- : adjustment for repair.
- Power voltage is dc 3V and fed with regulated dc power supply from battery terminal.
- Voltages are dc with respect to ground under no-signal conditions.
- no mark : PLAY
- () : REC

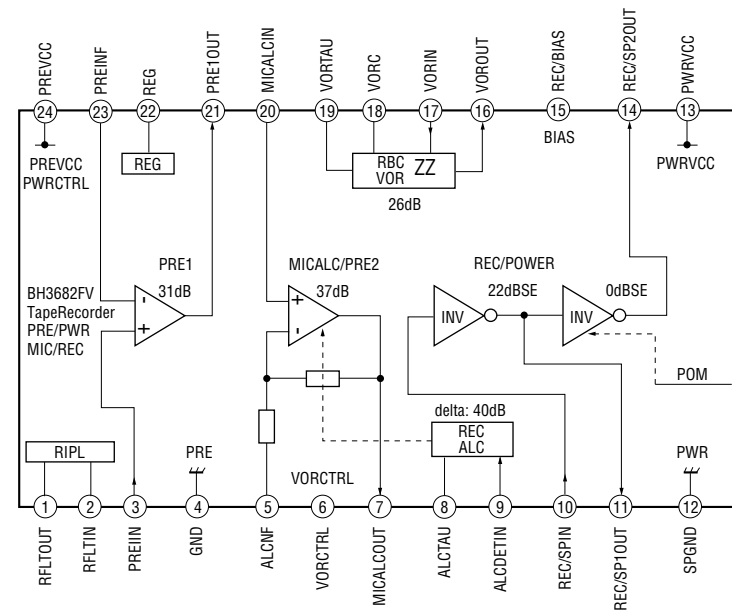
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- : PB
- : REC

• WAVEFORMS

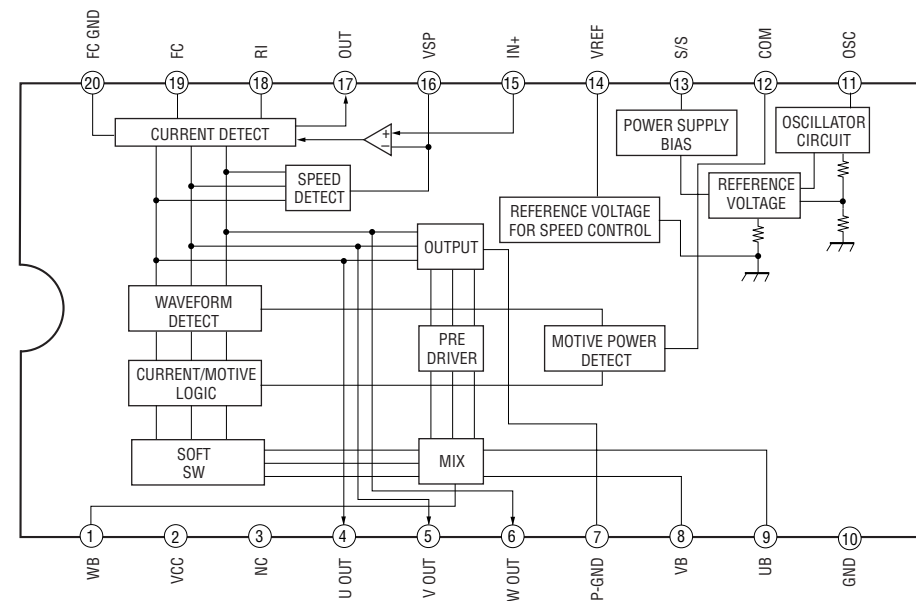


5-5. IC BLOCK DIAGRAMS

IC101 BH3682FV



IC601 LB1979VL-TLM-E

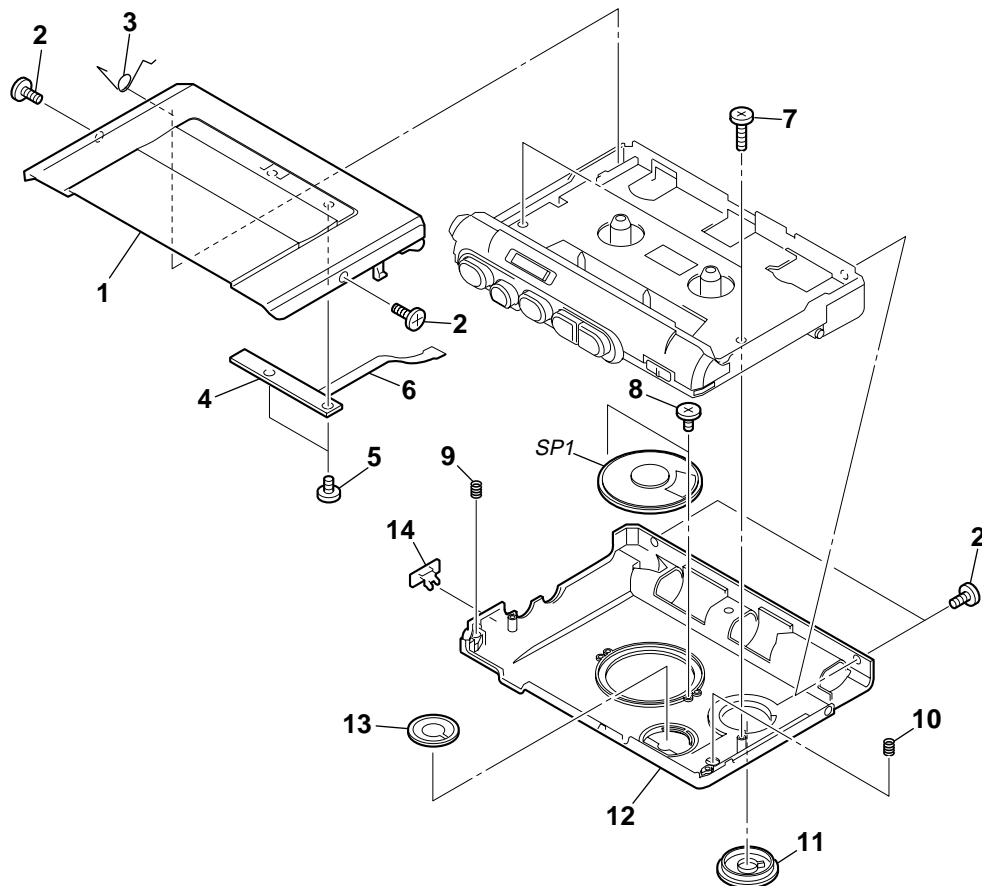


SECTION 6 EXPLODED VIEWS

NOTE:

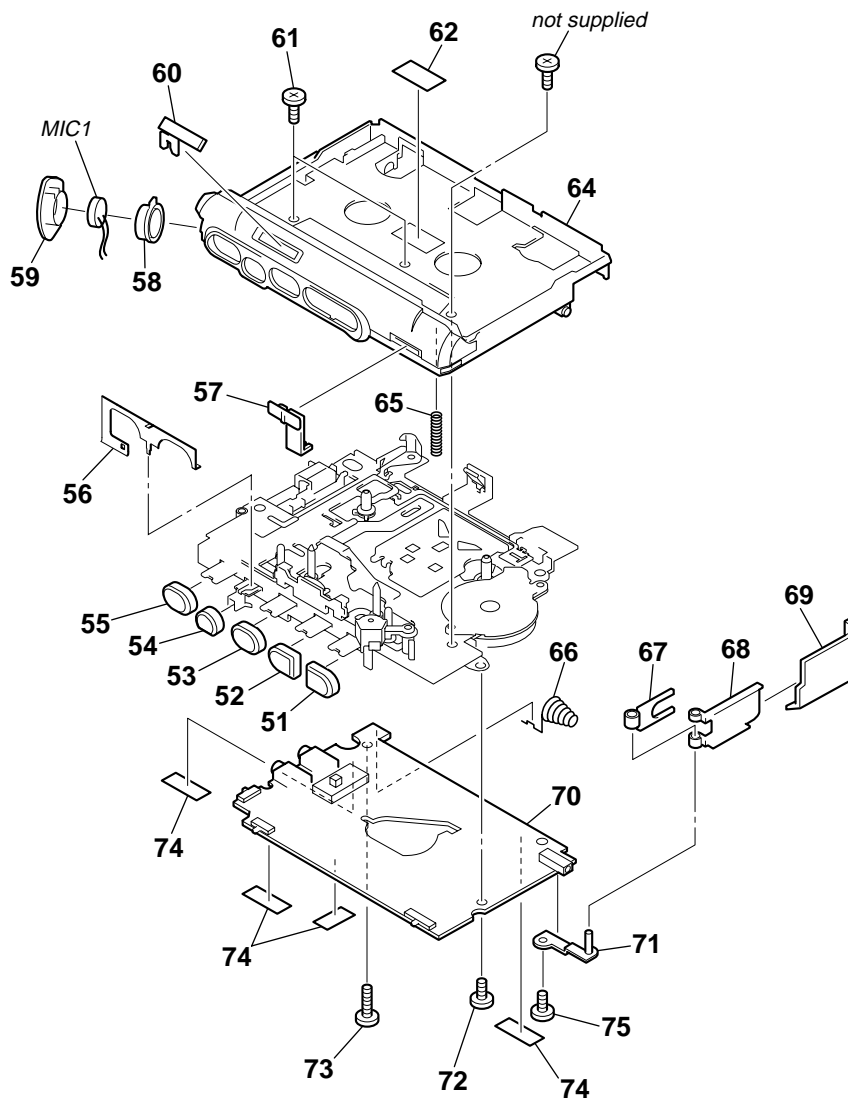
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories are given in the last of this parts list.
- Abbreviation
CND: Canadian model
EE : East European model
CH : Chinese model
JEW : Tourist model

6-1. CASSETTE LID, CABINET (REAR) SECTION



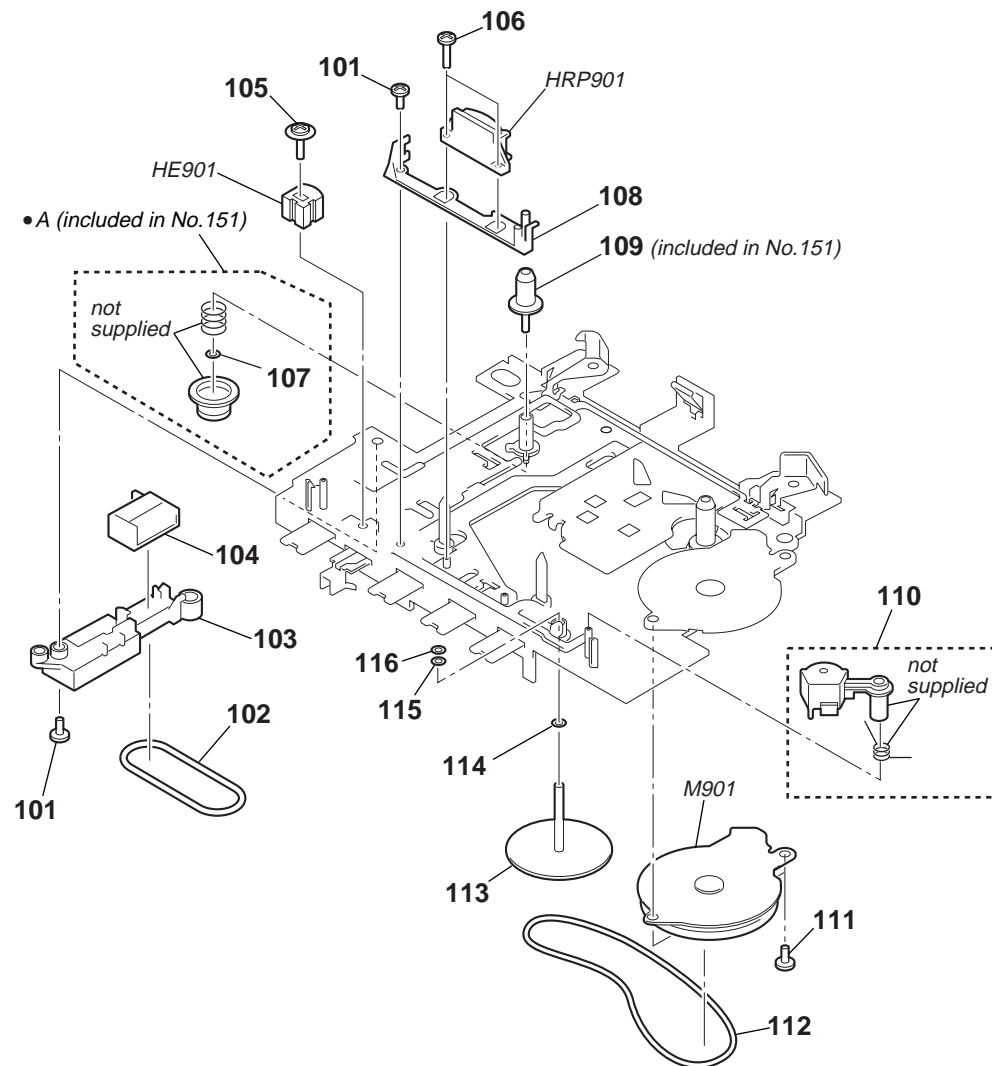
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	X-3385-017-1	LID SUB ASSY, CASSETTE		8	3-034-792-11	SCREW, TAPPING (B2.0)	
2	3-893-942-41	SCREW (1.7X3), TAPPING (B)		9	3-261-026-01	SPRING (GROUND) (2)	
3	3-258-991-01	SPRING, CASSETTE-UP		10	3-261-028-01	SPRING (GROUND) (3)	
* 4	1-860-841-11	LED BOARD		11	X-3385-015-1	KNOB (SPEED) SUB ASSY	
5	3-225-873-09	SCREW (M1.4)		12	X-3385-018-1	REAR SUB ASSY, CABINET	
6	1-860-842-11	FLEXIBLE BOARD		13	3-258-983-01	KNOB (VOL)	
7	3-318-203-97	SCREW (B1.7X9), TAPPING		14	3-258-996-01	KNOB (VOR)	
				SP1	1-825-657-11	SPEAKER (3.6cm)	

6-2. CABINET (FRONT) SECTION



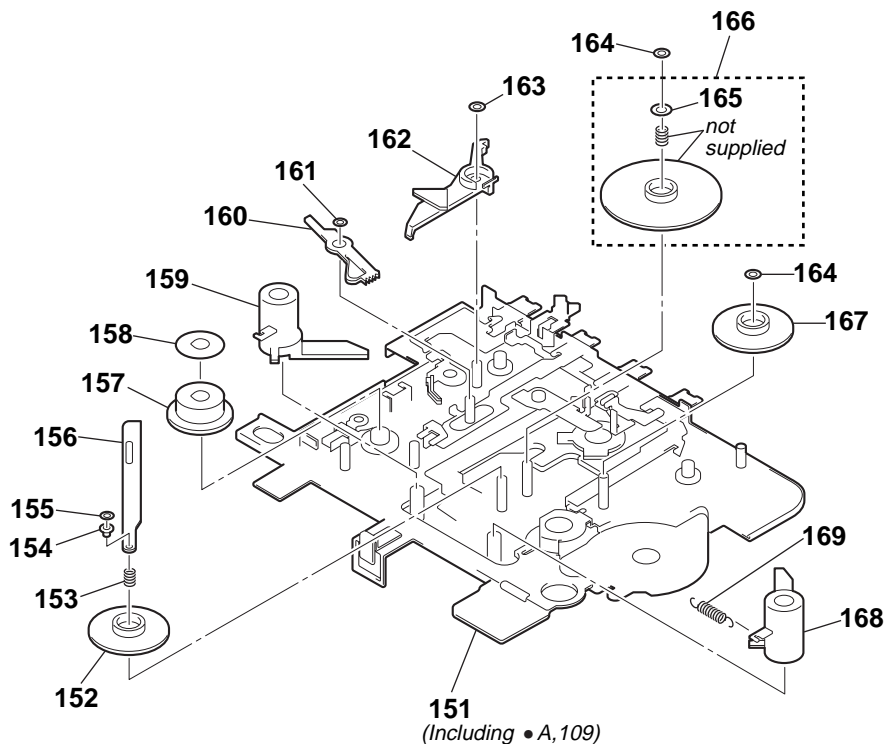
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	3-258-976-01	BUTTON (FF)		64	X-3385-019-1	FRONT SUB ASSY, CABINET (AEP, EE)	
52	3-258-977-01	BUTTON (REW)		65	3-258-985-01	SPRING (GROUND)	
53	3-258-975-01	BUTTON (PLAY)		66	3-258-984-01	TERMINAL (-), BATTERY	
54	3-258-974-01	BUTTON (STOP)		67	3-261-019-01	COVER, BATTERY TERMINAL	
55	3-258-973-01	BUTTON (REC)		68	3-258-981-01	TERMINAL (+), BATTERY	
56	3-258-978-01	LEVER (PAUSE)		69	3-258-982-01	LID, BATTERY CASE	
57	3-258-971-01	KNOB (REC TIME)		* 70	A-4541-638-A	MAIN BOARD, COMPLETE	
58	3-258-986-01	CUSHION, MICROPHONE		71	X-3384-947-1	PLATE (BATTERY SHAFT) ASSY	
59	3-258-987-01	CASE, MICROPHONE		72	3-345-648-01	SCREW (M1.4X3)	
60	3-258-970-01	KNOB (PAUSE)		73	3-318-203-97	SCREW (B1.7X9), TAPPING	
61	3-703-816-14	SCREW (M1.4)		74	3-831-441-99	SPACER, KNOB	
62	3-925-231-01	REFLECTOR		75	3-254-083-01	SCREW (M1.4 X 4.5)	
64	X-3385-016-1	FRONT SUB ASSY, CABINET (US, CND, E, CH, JEW)		MIC1	1-476-484-31	MICROPHONE UNIT, ELECTRET CAP	

6-3. MECHANISM DECK SECTION-1 (MT-450-175)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	3-703-816-16	SCREW (M1.4X2.5), SPECIAL HEAD		111	3-703-816-08	SCREW (M1.4X1.4), SPECIAL HEAD	
102	3-234-858-01	BELT (COUNTER)		112	3-265-409-01	BELT (CAP) (S)	
103	3-258-979-01	BRACKET (COUNTER)		113	X-3379-877-2	FLY ASSY (AR), CAPSTAN	
104	1-548-582-11	COUNTER, TAPE (SMALL TYPE)		114	3-386-694-01	WASHER	
105	3-703-925-41	SCREW (M1.4)		115	3-029-278-01	WASHER	
106	3-703-816-23	SCREW (M1.4X4.5), SPECIAL HEAD		116	3-029-275-01	WASHER (STOPPER N)	
107	3-231-358-01	WASHER		HE901	1-500-515-12	HEAD, MAGNETIC (ERASE)	
108	3-234-861-02	GUIDE (ARO), TAPE		HRP901	1-500-823-11	HEAD, MAGNETIC (RECODE/PLAYBACK)	
109	3-019-776-03	GEAR (REEL-S)		M901	1-787-098-11	MOTOR, DC (CAPSTAN/REEL) (including PULLEY)	
110	X-3379-882-3	PINCH (N) ASSY, ARM					

6-4. MECHANISM DECK SECTION-2 (MT-450-175)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
151	X-3384-292-1	CHASSIS ASSY (ARO) (S)		161	3-229-064-01	WASHER, STOPPER	
152	3-225-385-03	GEAR (B)		162	3-225-393-03	LEVER (SHUT/OFF)	
153	3-229-063-01	SPRING (UD) (R), COMPRESSION		163	3-321-813-71	WASHER, COTTER POLYETHYLENE	
154	3-019-778-03	SLEEVE (MS)		164	3-315-384-31	WASHER, STOPPER	
155	3-728-091-01	WASHER, STOPPER		165	3-344-901-01	WASHER, STOPPER	
156	3-225-427-01	WASHER, LEVER		166	X-3379-881-3	CLUTCH ASSY (AR)	
157	3-225-384-02	GEAR (A)		167	3-225-388-04	GEAR (D)	
158	3-261-398-01	REFLECTOR (450)		168	3-225-394-04	LEVER (FF ROTARY)	
159	3-225-395-04	LEVER (REW ROTARY)		169	3-225-444-01	SPRING (FR ROTARY), TENSION	
160	X-3380-677-3	LEVER (E DETECTION) ASSY					

SECTION 7 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, -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: μF

- RESISTORS
All resistors are in ohms.
METAL: metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- COILS
uH: μH
- SEMICONDUCTORS
In each case, u: μ, for example:
uA...: μA..., uPA..., μPA...,
uPB..., μPB..., uPC..., μPC...,
uPD..., μPD...

- Abbreviation
CND: Canadian model
EE : East European model
CH : Chinese model
JEW : Tourist model

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

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
*	1-860-841-11	LED BOARD *****		C312	1-104-851-11	TANTAL. CHIP 10uF 20%	10V
	1-860-842-11	PWB, FLEXIBLE < DIODE >		C314	1-126-518-11	ELECT 470uF 20%	4V
D701	8-719-081-41	DIODE BR1113F-TR (REC/BATT)		C315	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
D702	8-719-075-57	DIODE FY1113F-TR (C□)		C401	1-115-156-11	CERAMIC CHIP 1uF	10V
*****				C402	1-115-156-11	CERAMIC CHIP 1uF	10V
*	A-4541-638-A	MAIN BOARD, COMPLETE *****		C403	1-115-156-11	CERAMIC CHIP 1uF	10V
		< CAPACITOR >		C404	1-115-156-11	CERAMIC CHIP 1uF	10V
C101	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C405	1-104-851-11	TANTAL. CHIP 10uF 20%	10V
C102	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C406	1-135-834-91	CERAMIC CHIP 2.2uF	6.3V
C103	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C501	1-115-156-11	CERAMIC CHIP 1uF	10V
C104	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C502	1-135-151-21	TANTALUM CHIP 4.7uF 20%	4V
C105	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	C504	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C106	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C505	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C107	1-135-177-21	TANTALUM CHIP 1uF 20%	20V	C601	1-117-863-11	CERAMIC CHIP 0.47uF 10%	6.3V
C108	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C602	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C109	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	C604	1-125-838-11	CERAMIC CHIP 2.2uF 10%	6.3V
C111	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	C605	1-104-851-11	TANTAL. CHIP 10uF 20%	10V
C112	1-115-156-11	CERAMIC CHIP 1uF	10V	C606	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C113	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C607	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C114	1-115-467-11	CERAMIC CHIP 0.22uF 10%	10V	C608	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C115	1-115-156-11	CERAMIC CHIP 1uF	10V	C609	1-115-467-11	CERAMIC CHIP 0.22uF 10%	10V
C116	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V	C610	1-104-851-11	TANTAL. CHIP 10uF 20%	10V
C117	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	C701	1-113-619-11	CERAMIC CHIP 0.47uF	10V
C119	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C703	1-115-156-11	CERAMIC CHIP 1uF	10V
C120	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C704	1-115-156-11	CERAMIC CHIP 1uF	10V
C122	1-115-467-11	CERAMIC CHIP 0.22uF 10%	10V	C705	1-115-156-11	CERAMIC CHIP 1uF	10V
C123	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C706	1-119-750-11	TANTAL. CHIP 22uF 20%	6.3V
C124	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C801	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C125	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C802	1-104-851-11	TANTAL. CHIP 10uF 20%	10V
C301	1-119-750-11	TANTAL. CHIP 22uF 20%	6.3V	C803	1-115-156-11	CERAMIC CHIP 1uF	10V
C302	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	C901	1-115-156-11	CERAMIC CHIP 1uF	10V
C303	1-124-434-00	ELECT 220uF 20%	4V	< DIODE >			
C305	1-135-834-91	CERAMIC CHIP 2.2uF	6.3V	D301	8-719-988-61	DIODE 1SS355TE-17	
C306	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	D302	8-719-988-61	DIODE 1SS355TE-17	
C307	1-135-151-21	TANTALUM CHIP 4.7uF 20%	4V	D801	8-719-988-61	DIODE 1SS355TE-17	
C308	1-135-834-91	CERAMIC CHIP 2.2uF	6.3V	< IC >			
C309	1-104-851-11	TANTAL. CHIP 10uF 20%	10V	IC101	6-704-794-01	IC BH3682FV	
C311	1-126-518-11	ELECT 470uF 20%	4V	IC102	6-705-813-01	IC MM3031HULE	
				IC601	8-759-638-51	IC LB1979VS-TLM-E	
				IC701	6-704-872-01	IC PST3720UL	

TCM-450DV

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
		< JACK >		R115	1-216-817-11	METAL CHIP 470	5% 1/10W
J101	1-793-430-11	JACK, SMALL TYPE (MIC(PLUG IIN POWER))		R118	1-216-813-11	METAL CHIP 220	5% 1/10W
J102	1-785-791-11	JACK (EAR)		R119	1-216-817-11	METAL CHIP 470	5% 1/10W
J901	1-794-615-11	JACK,DC (POLARITY UNIFIED TYPE) (DC IN 3V)		R120	1-216-821-11	METAL CHIP 1K	5% 1/10W
		< REFLECTOR >		R124	1-216-813-11	METAL CHIP 220	5% 1/10W
PH801	8-749-016-61	REFLECTOR NJL5197K-W-F20 (TE1)		R125	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
		< TRANSISTOR >		R127	1-216-837-11	METAL CHIP 22K	5% 1/10W
Q301	8-729-028-97	TRANSISTOR DTC114TUA-T106		R128	1-216-817-11	METAL CHIP 470	5% 1/10W
Q302	8-729-029-14	TRANSISTOR DTC144EUA-T106		R129	1-216-841-11	METAL CHIP 47K	5% 1/10W
Q303	8-729-028-99	TRANSISTOR DTC114YUA-T106		R201	1-216-801-11	METAL CHIP 22	5% 1/10W
Q304	8-729-013-37	TRANSISTOR 2SC4213-AB-TE85L		R301	1-216-817-11	METAL CHIP 470	5% 1/10W
Q305	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR		R302	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
Q401	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR		R303	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
Q402	8-729-028-76	TRANSISTOR DTA114YUA-T106		R304	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q403	8-729-028-99	TRANSISTOR DTC114YUA-T106		R305	1-216-837-11	METAL CHIP 22K	5% 1/10W
Q404	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR		R307	1-216-837-11	METAL CHIP 22K	5% 1/10W
Q405	8-729-905-34	TRANSISTOR 2SC4081T106Q		R308	1-216-837-11	METAL CHIP 22K	5% 1/10W
Q407	8-729-028-76	TRANSISTOR DTA114YUA-T106		R309	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q408	8-729-028-99	TRANSISTOR DTC114YUA-T106		R310	1-216-817-11	METAL CHIP 470	5% 1/10W
Q409	8-729-028-99	TRANSISTOR DTC114YUA-T106		R311	1-216-857-11	METAL CHIP 1M	5% 1/10W
Q410	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR		R312	1-216-801-11	METAL CHIP 22	5% 1/10W
Q411	8-729-028-76	TRANSISTOR DTA114YUA-T106		R313	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
Q412	8-729-028-99	TRANSISTOR DTC114YUA-T106		R314	1-216-821-11	METAL CHIP 1K	5% 1/10W
Q413	8-729-028-99	TRANSISTOR DTC114YUA-T106		R315	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
Q601	8-729-823-86	TRANSISTOR 2SA1745-TL-E		R316	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
Q602	8-729-602-21	TRANSISTOR 2SC4154TP-1EF		R318	1-216-837-11	METAL CHIP 22K	5% 1/10W
Q603	8-729-823-86	TRANSISTOR 2SA1745-TL-E		R401	1-216-837-11	METAL CHIP 22K	5% 1/10W
Q604	8-729-028-76	TRANSISTOR DTA114YUA-T106		R402	1-216-841-11	METAL CHIP 47K	5% 1/10W
Q701	8-729-427-74	TRANSISTOR XP4601-TXE		R403	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q702	8-729-028-97	TRANSISTOR DTC114TUA-T106		R404	1-216-837-11	METAL CHIP 22K	5% 1/10W
Q703	8-729-028-76	TRANSISTOR DTA114YUA-T106		R405	1-216-821-11	METAL CHIP 1K	5% 1/10W
Q704	8-729-429-44	TRANSISTOR XP1501-TXE		R406	1-216-845-11	METAL CHIP 100K	5% 1/10W
Q705	8-729-028-74	TRANSISTOR DTA114TUA-T106		R407	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
Q706	8-729-028-99	TRANSISTOR DTC114YUA-T106		R408	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q801	8-729-905-34	TRANSISTOR 2SC4081T106Q		R409	1-216-845-11	METAL CHIP 100K	5% 1/10W
Q802	8-729-028-76	TRANSISTOR DTA114YUA-T106		R410	1-216-837-11	METAL CHIP 22K	5% 1/10W
Q803	8-729-905-34	TRANSISTOR 2SC4081T106Q		R502	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q804	8-729-028-74	TRANSISTOR DTA114TUA-T106		R601	1-216-817-11	METAL CHIP 470	5% 1/10W
Q805	8-729-905-34	TRANSISTOR 2SC4081T106Q		R602	1-216-864-11	METAL CHIP 0	5% 1/10W
Q901	8-729-905-34	TRANSISTOR 2SC4081T106Q		R603	1-216-833-11	METAL CHIP 10K	5% 1/10W
Q902	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR		R605	1-216-833-11	METAL CHIP 10K	5% 1/10W
		< RESISTOR >		R606	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R102	1-216-845-11	METAL CHIP 100K	5% 1/10W	R607	1-216-857-11	METAL CHIP 1M	5% 1/10W
R103	1-216-833-11	METAL CHIP 10K	5% 1/10W	R608	1-216-857-11	METAL CHIP 1M	5% 1/10W
R104	1-216-845-11	METAL CHIP 100K	5% 1/10W	R609	1-216-845-11	METAL CHIP 100K	5% 1/10W
R105	1-216-841-11	METAL CHIP 47K	5% 1/10W	R610	1-216-857-11	METAL CHIP 1M	5% 1/10W
R107	1-216-813-11	METAL CHIP 220	5% 1/10W	R611	1-216-833-11	METAL CHIP 10K	5% 1/10W
R108	1-216-821-11	METAL CHIP 1K	5% 1/10W	R612	1-216-809-11	METAL CHIP 100	5% 1/10W
R109	1-216-817-11	METAL CHIP 470	5% 1/10W	R613	1-216-809-11	METAL CHIP 100	5% 1/10W
R110	1-216-837-11	METAL CHIP 22K	5% 1/10W	R614	1-216-833-11	METAL CHIP 10K	5% 1/10W
R111	1-216-837-11	METAL CHIP 22K	5% 1/10W	R615	1-216-841-11	METAL CHIP 47K	5% 1/10W
R112	1-216-825-11	METAL CHIP 2.2K	5% 1/10W	R616	1-216-833-11	METAL CHIP 10K	5% 1/10W
R113	1-216-825-11	METAL CHIP 2.2K	5% 1/10W	R617	1-216-841-11	METAL CHIP 47K	5% 1/10W
R114	1-216-849-11	METAL CHIP 220K	5% 1/10W	R702	1-216-821-11	METAL CHIP 1K	5% 1/10W
				R703	1-216-813-11	METAL CHIP 220	5% 1/10W
				R704	1-216-849-11	METAL CHIP 220K	5% 1/10W
				R706	1-216-821-11	METAL CHIP 1K	5% 1/10W

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R707	1-216-857-11	METAL CHIP	1M 5% 1/10W			ACCESSORIES	
R708	1-216-825-11	METAL CHIP	2.2K 5% 1/10W			*****	
R709	1-216-821-11	METAL CHIP	1K 5% 1/10W				
R712	1-216-853-11	METAL CHIP	470K 5% 1/10W		3-220-749-21	CASE,CARRYING	
R713	1-216-837-11	METAL CHIP	22K 5% 1/10W		3-261-017-11	MANUAL,INSTRUCTION (ENGLISH,FRENCH,SPANISH) (AEP,CND,US)	
R714	1-216-837-11	METAL CHIP	22K 5% 1/10W		3-261-017-21	MANUAL,INSTRUCTION (PORTUGUESE,FINNISH,SWEDISH) (AEP)	
R716	1-216-853-11	METAL CHIP	470K 5% 1/10W		3-261-017-31	MANUAL,INSTRUCTION (GERMAN,ITALIAN,DUTCH) (AEP)	
R717	1-216-829-11	METAL CHIP	4.7K 5% 1/10W		3-261-017-51	MANUAL,INSTRUCTION (ENGLISH,RUSSIAN,SLOVAKIAN) (EE,JEV)	
R802	1-216-813-11	METAL CHIP	220 5% 1/10W		3-261-017-61	MANUAL,INSTRUCTION (CZECH,HUNGRIAN,POLISH) (EE)	
R803	1-216-841-11	METAL CHIP	47K 5% 1/10W		3-261-017-71	MANUAL,INSTRUCTION (ENGLISH,SIMPLIFIED,CHINESE) (CH)	
R806	1-216-857-11	METAL CHIP	1M 5% 1/10W		3-261-017-81	MANUAL,INSTRUCTION (TRADITIONAL CHINESE,KOREAN) (JEV)	
R807	1-216-841-11	METAL CHIP	47K 5% 1/10W		3-261-017-91	MANUAL,INSTRUCTION (ENGLISH,KOREAN) (Korean)	
R808	1-216-849-11	METAL CHIP	220K 5% 1/10W				
R809	1-216-857-11	METAL CHIP	1M 5% 1/10W				
R810	1-216-849-11	METAL CHIP	220K 5% 1/10W				
R901	1-216-825-11	METAL CHIP	2.2K 5% 1/10W				
R902	1-216-849-11	METAL CHIP	220K 5% 1/10W				
R907	1-216-849-11	METAL CHIP	220K 5% 1/10W				
R908	1-216-841-11	METAL CHIP	47K 5% 1/10W				
		< VARIABLE RESISTOR >					
RV101	1-227-612-11	RES, VAR, CARBON 5K (VOL)					
RV201	1-227-445-11	RES, VAR, CARBON 30K (SPEED CONTROL)					
RV601	1-241-593-11	RES, ADJ, CERMET 4.7K (TAPE SPEED (NORMAL))					
RV602	1-225-868-21	RES, ADJ, CERMET 2.2K (TAPE SPEED (DOUBLE))					
		< SWITCH >					
S101	1-786-282-11	SWITCH, SLIDE (PB/REC)					
S102	1-572-688-11	SWITCH, PUSH (1 KEY) (POWER)					
S301	1-572-922-11	SWITCH, SLIDE (PAUSE →)					
S401	1-762-594-41	SWITCH, PUSH (1 KEY) (FF/REW DET)					
S501	1-572-922-11	SWITCH, SLIDE (VOR)					
S601	1-571-277-51	SWITCH, SLIDE (REC TIME/PLAY MODE)					
S602	1-572-688-11	SWITCH, PUSH (1 KEY) (FF/REW)					
		< THERMISTOR >					
THP601	1-810-794-11	THERMISTOR, POSITIVE					

		MISCELLANEOUS					

6	1-860-842-11	FLEXIBLE BOARD					
104	1-548-582-11	COUNTER, TAPE (SMALL TYPE)					
M901	1-787-098-11	MOTOR, DC (CAPSTAN/REEL) (including PULLEY)					
MIC1	1-476-484-31	MICROPHONE UNIT, ELECTRET CAP					
HE901	1-500-515-12	HEAD, MAGNETIC (ERASE)					
HRP901	1-500-823-11	HEAD, MAGNETIC (RECODE/PLAYBACK)					
SP1	1-825-657-11	SPEAKER (3.6cm)					
