

SERVICE MANUAL

STEREO CASSETTE PLAYER

BASIC TAPE MECHANISM : CL-850-5 SIL

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-003-425-7T2).

aiwa

S/M Code No. 09-005-425-7R2

REVISION

DATA

SPECIFICATIONS

Maximum output:	5 mW + 5 mW (EIAJ 32 ohms)
Power source:	DC 3 V using two R6 (AA) dry cell batteries, AC house current using the optional AC adaptor AC-D302
Battery life (EIAJ 1 mW output):	Aprox. 24 hours using two LR6 (AA) alkaline batteries
Maximum outside dimensions:	112.9 (W) x 84 (H) x 29.3 (D) mm (4 1/2 x 3 3/8 x 1 3/16 in.) (excluding projecting parts and controls)
Weight	Approx. 124 g (4.3 oz) excluding batteries

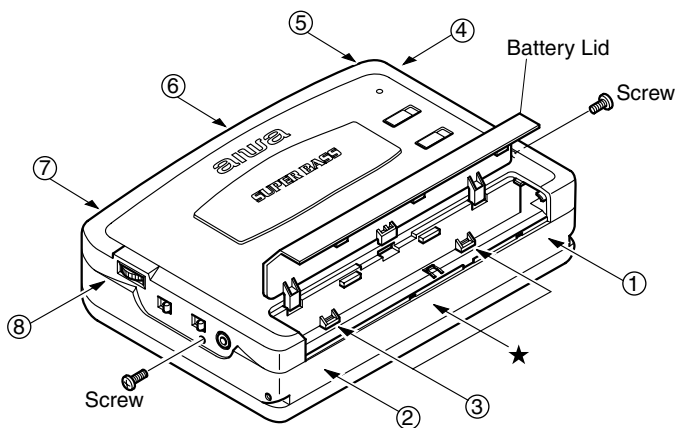
- Design and specifications are subject to change without notice.

ACCESSORIES / PACKAGE LIST

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
1	8A-HKG-902-010	IB,YJ(ECC) F	
2	87-B30-255-010	HEADPHONE,HP-M007B(S)	

DISASSEMBLY INSTRUCTION

- 1) Remove the 2 screws.
- 2) Open the battery lid.
- 3) Release the hooks in the order of ①-⑧.
 - * Releasing hook 3 : After releasing hooks ① and ②, push the center frame (with the ★ marks) to release hook ③.



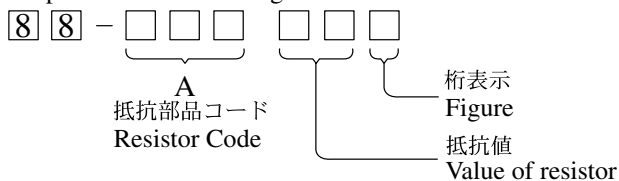
ELECTRICAL MAIN PARTS LIST

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION	REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
IC				C128	87-010-805-080		C-CAP,S 1-16
	87-002-677-080		C-IC,TA2002F	C303	87-010-196-080		C-CAP,S 0.1-25
	87-A20-532-140		C-IC,LB1977M-TLM	C304	87-010-196-080		C-CAP,S 0.1-25
	87-A21-567-040		C-IC,TMP47C443LDM-1B45 (EL)	C401	87-A10-201-080		C-CAP,S 0.33-16 KB
	87-A21-566-040		C-IC,S-80820ANNP	C403	87-010-805-080		C-CAP,U 1-16 Z F
	87-A21-565-040		C-IC,S-80817ANNP				
TRANSISTOR				C404	87-016-526-080		C-CAP,S 0.47-16 K B
	89-327-125-080		C-TR,2SC2712GR	C405	87-010-992-080		C-CAP,S 0.047-25 B
	89-113-625-080		C-TR,2SA1362GR	C406	87-A10-263-080		C-CAP,U 0.1-16 Z F
	87-026-581-080		C-TR,RN2405	C407	87-010-992-080		C-CAP,S 0.047-25 B
	87-A30-085-040		C-TR,CSA1362GR	C408	87-010-992-080		C-CAP,S 0.047-25 B
	87-026-267-080		C-TR,RN2407				
DIODE				C409	87-010-992-080		C-CAP,S 0.047-25 B
	87-A40-822-040		C-DIODE,CRS01	C410	87-A10-263-080		C-CAP,U 0.1-16ZF
MAIN C.B				C701	87-A10-263-080		C-CAP,U 0.1-16 Z F
C101	87-012-275-080		C-CAP,U 1200P-50 B	C702	87-012-141-080		C-CAP,S 0.22-16 Z F
C102	87-012-275-080		C-CAP,U 1200P-50 B	C705	87-A10-263-080		C-CAP,U 0.1-16 Z F
C103	87-012-275-080		C-CAP,U 1200P-50 B				
C104	87-012-275-080		C-CAP,U 1200P-50 B	C706	87-010-805-080		CAP, S 1-16
C105	87-012-276-080		C-CAP,U 1500P-50	C707	87-010-196-080		C-CAP,S 0.1-25
C106	87-012-276-080		C-CAP,U 1500P-50	C708	87-A10-263-080		C-CAP,U 0.1-16 Z F
C107	87-010-501-010		CAP,E 47-4V	C710	87-A10-263-080		C-CAP,U 0.1-16 Z F
C108	87-010-501-010		CAP,E 47-4V	C714	87-A10-263-080		C-CAP,U 0.1-16 Z F
C111	87-015-688-010		CAP,E 4.7-35				
C112	87-012-142-080		CAP, S 0.33-16	C801	87-A10-489-010		CAP,E 220-4 7L SR
C113	87-010-805-080		CAP, S 1-16	D601	87-A91-355-040		C-LED,BR1112H-TR-RED
C114	87-012-141-080		C-CAP,S 0.22-16 Z F C2012	J101	87-A60-438-010		JACK,3.5 BLK ST W/O SW (1537)
C117	87-012-278-080		C-CAP,U 2200P-50 B	J801	87-A61-124-010		JACK,DC DIA2.75 BLK TC
C118	87-012-278-080		C-CAP,U 2200P-50 B	PS501	87-A90-440-010		SNSR,PHOTO GP2S24N2-B
C119	87-A10-263-080		C-CAP,U 0.1-16 Z F				
C120	87-A10-263-080		C-CAP,U 0.1-16 Z F	R713	87-022-245-080		C-RES U 18K-1/16W F
C121	87-010-502-010		CAP,E 100-4 M KS	R727	87-A10-263-080		C-CAP,U 0.1-16 Z F
C122	87-010-503-010		CAP,E 220-4 GAS	S101	87-A90-050-010		SW, SL 2-2-2 NS (BLK)
C125	87-010-501-010		CAP,E 47-4V	S301	87-A90-050-010		SW, SL 2-2-2 NS (BLK)
C127	87-010-805-080		C-CAP,S 1-16	S701	87-A90-665-280		C-SW,TACT LS7A2M
				S702	87-A90-665-280		C-SW,TACT LS7A2M
				S703	87-A90-665-280		C-SW,TACT LS7A2M
				S704	87-A90-665-280		C-SW,TACT LS7A2M
				S705	87-036-379-180		C-SW,SL1-1-2 SS350
				S706	87-A91-365-080		C-SW,PUSH 1-1-1 SPVG21
				SFR401	87-A91-653-040		C-SFR,K 33K H RH03AEC
				TH401	87-A91-675-080		C-THMS,NTH5G16P39B472K 07TH
				VR101	87-A91-650-010		VR,RTRY 50KCX2 H XV0102G
				X701	87-A70-241-010		VIB,CER 4.000MHZ CSTS0400MG03


チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

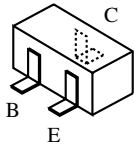
Chip Resistor Part Coding



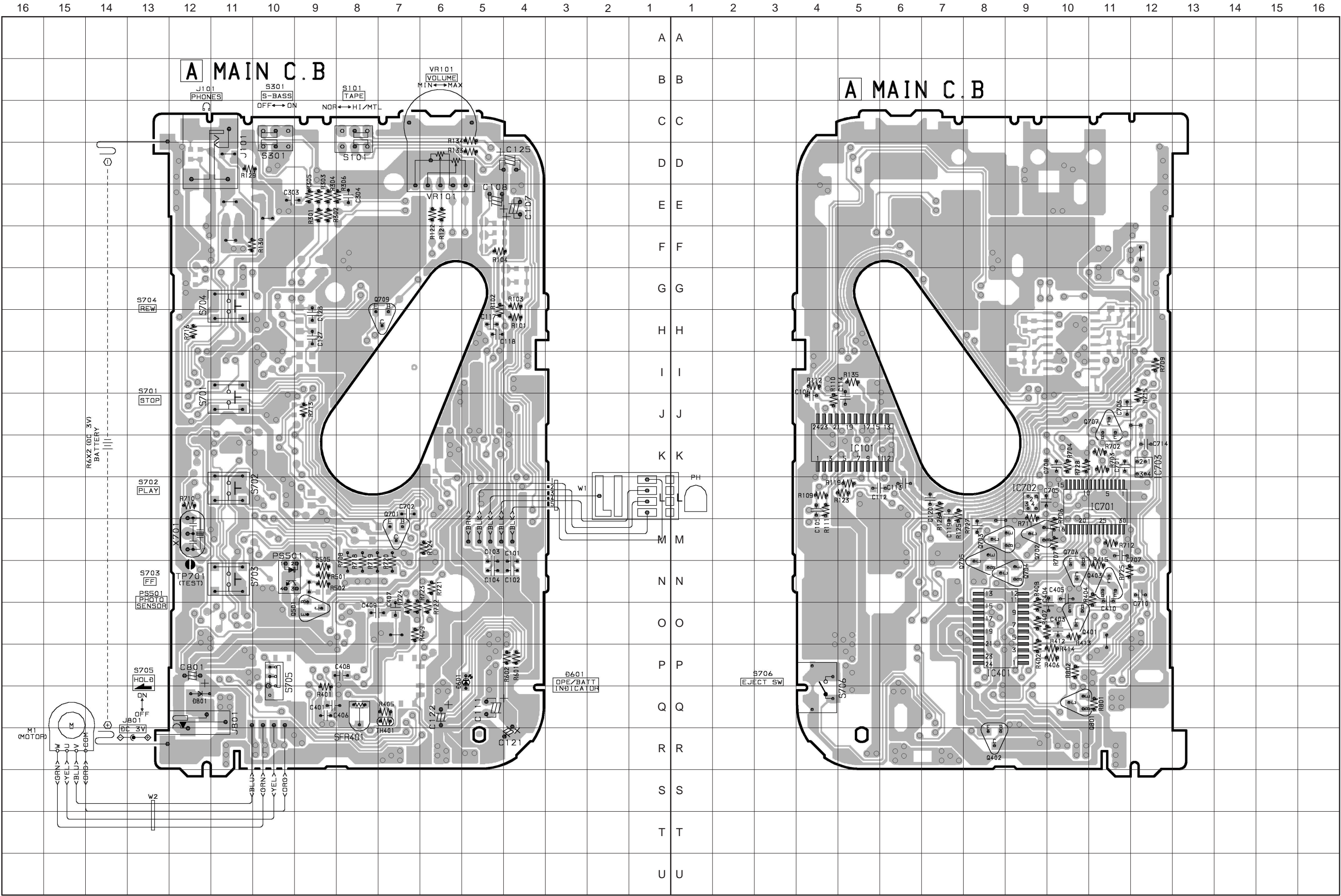
チップ抵抗 Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード Resistor Code : A
				外形／Form	L	W	t	
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

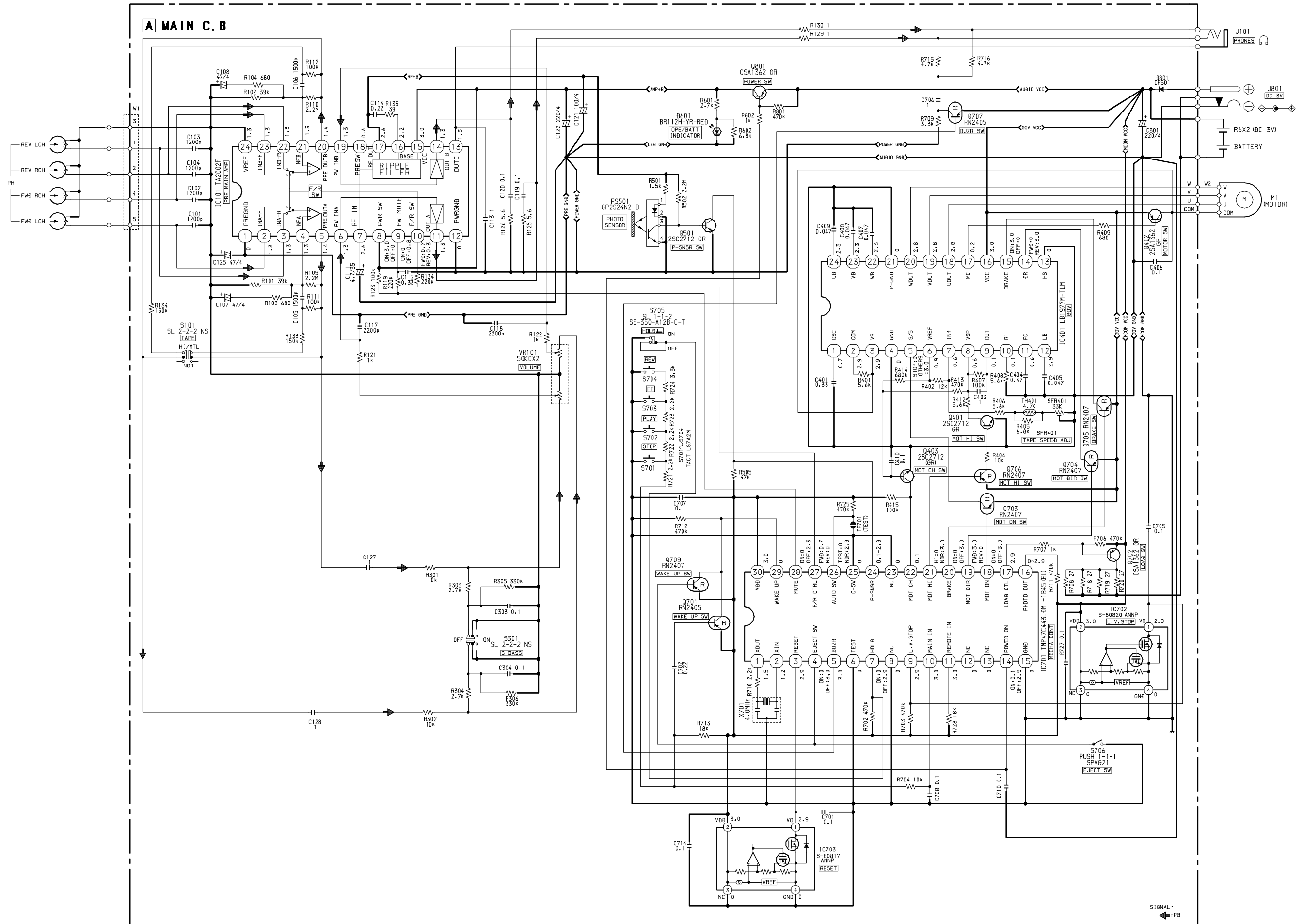
TRANSISTOR ILLUSTRATION



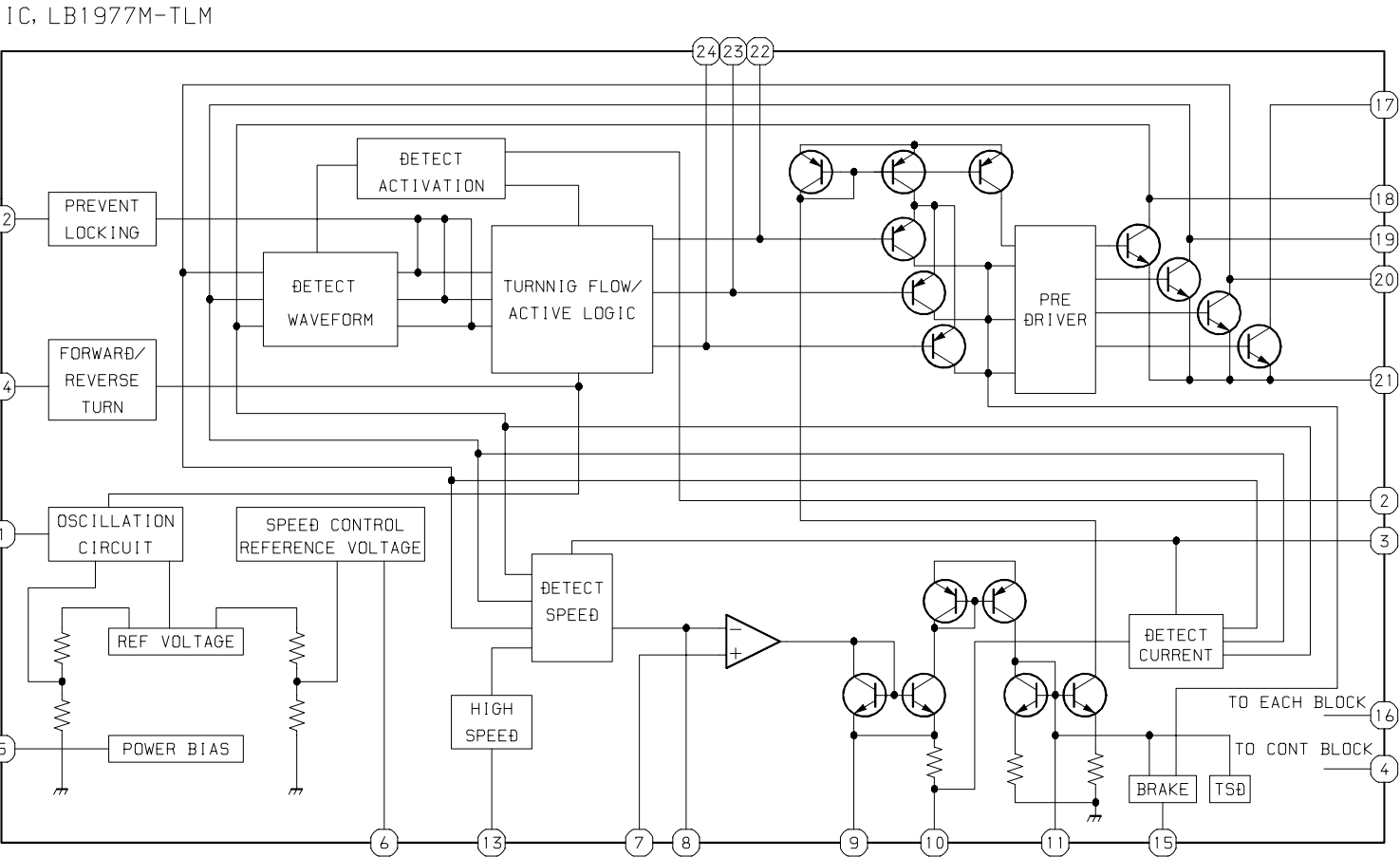
2SA1362
2SC2712
CSA1362
RN2405
RN2407



SCHEMATIC DIAGRAM



IC BLOCK DIAGRAM



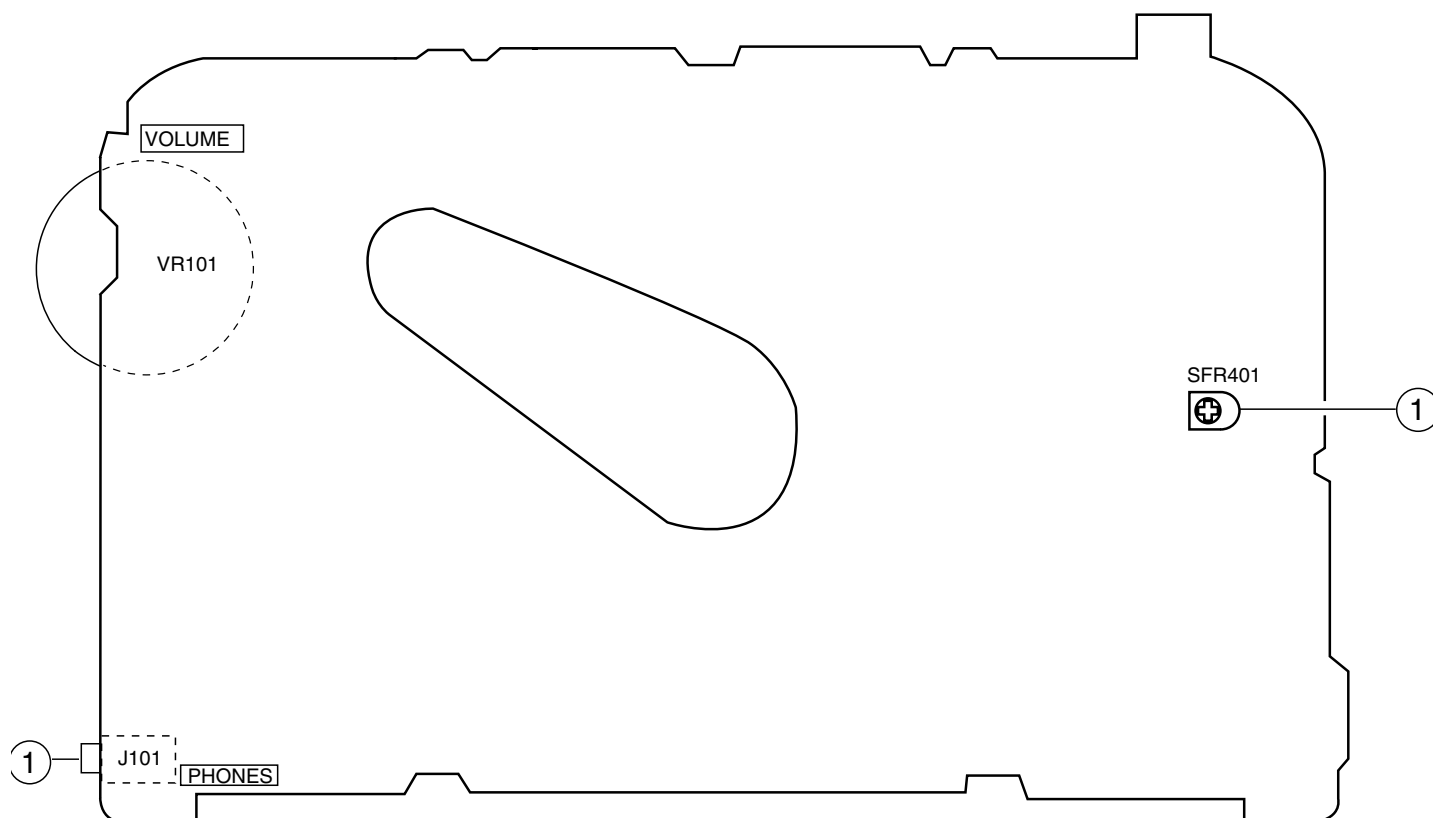
IC DESCRIPTION

IC, TMP47C443LDM-1B45(EL)

Pin No.	Pin Name	I/O	Description
1	XOUT	O	Connected to 4MHz crystal oscillator.
2	XIN	I	
3	RESET	I	Input reset signal.
4	EJECT SW	I	Input EJECT SW. "H": OFF, "L": ON.
5	BUZR	O	Output buzzer sound.
6	TEST	I	Input test mode. "H": Test ON. (Connected to GND)
7	HOLD	I	Input HOLD SW. "H": OFF, "L": ON.
8	NC	–	Connected to GND.
9	L.V.STOP	I	Input reducing voltage detection. "L": Mecha STOP.
10	MAIN IN	I	Input key from main unit(A/D).
11	REMOTE IN	I	Input key from remote controller(A/D).
12 ~ 13	NC	–	Not connected.
14	POWER ON	O	Output power for audio circuit. "L": ON.
15	GND	–	Connected to GND.
16	PHOTO OUT	O	Microcomputer detection P-SNSR level output pin.
17	LOAD CTL	O	Output for voltage supply checking. "L": Check.
18	MOT ON	O	Output motor activation. "L": ON.
19	MOT DIR	O	Output motor rotating direction. "L": Counterclockwise.
20	BRAKE	O	Output motor brake. "L": ON.
21	MOT HI	O	Output motor hi-speed activation. "L": ON.
22	MOT CH	I	Input motor activation detection.
23	NC	–	Connected to GND.
24	P-SNSR	I	Input sensor waveform.
25	C-SW	I	Input cassette tape detection. "H": Not exist, "L": Exist. (Connected to GND)
26	AUTO SW	I	Input AUTO SW. "H": AUTO operation, "L": NO AUTO operation.
27	F/R CTRL	O	Output FWD, REV control. "L": REV.
28	MUTE	O	Output muting. "L": ON.
29	WAKE UP	I	Input micro-computer OSC ON.
30	VDD	–	Power supply (+3V).

ADJUSTMENT

A MAIN C.B



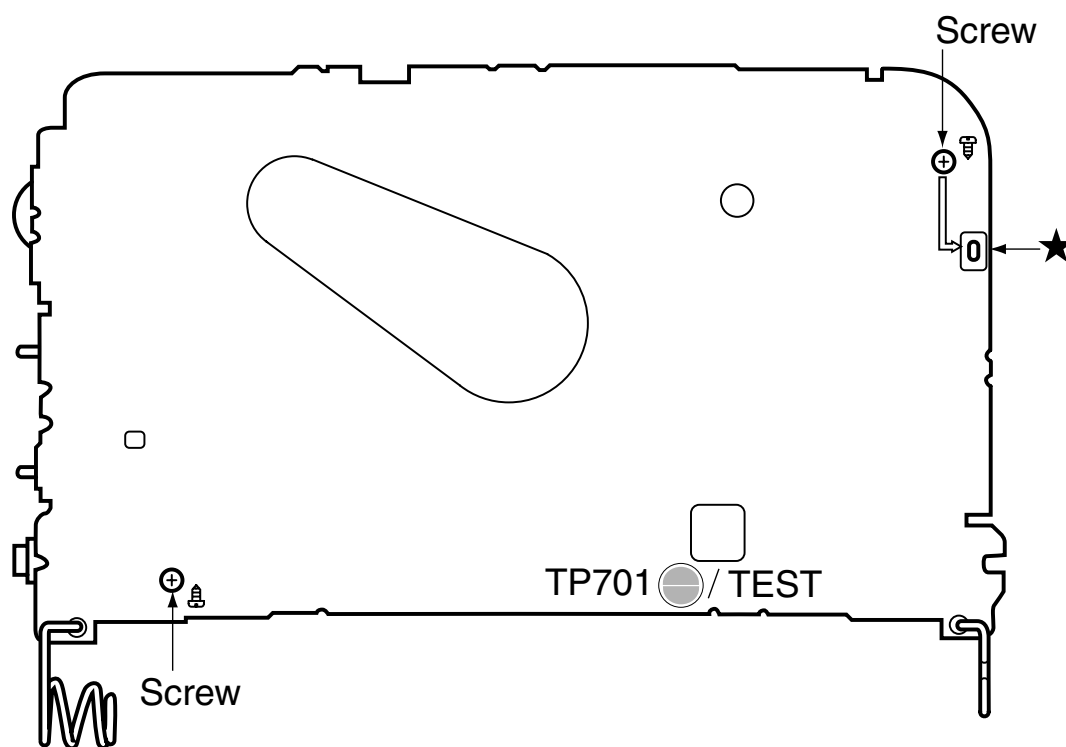
1. Tape Speed Adjustment

- Settings:
- Test tape : TTA -100 (Tape center)
 - Test point : Phones Jack (J101)
 - Adjustment location : SFR401
 - Super Bass : OFF
 - Direction : FWD
 - Tape selector : NORM
 - Volume : MAX

Method : Play back the test tape and adjust SFR401 so that the frequency becomes $3015 \text{ Hz} \pm 10 \text{ Hz}$. Then confirm WOW is less than 0.52%.

TEST MODE

This model has a test mode function in the disassembled condition.



1. How to use the test mode:

- Short the test land in the MAIN C.B.
- Auto-stop function is not detected by micro-computer while test mode is active.

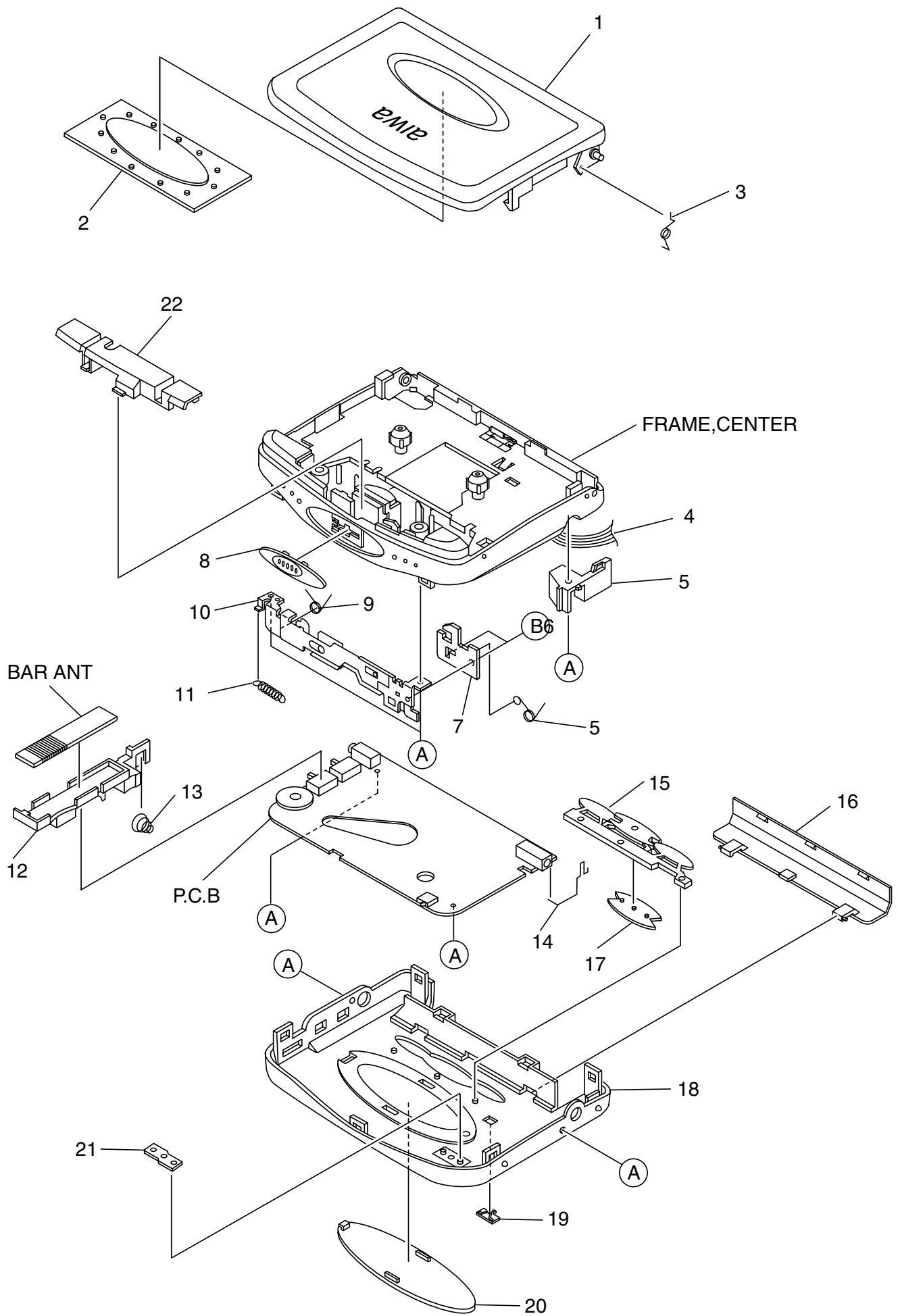
Note: Make sure that the test land is opened after the test mode is de-activated.

(Auto-stop function is not available with shorted land condition.)

2. How to disassemble the circuit board.

- Removes the soldering part in the MAIN C.B (with the ★ mark).
- Removes two screws.

MECHANICAL EXPLODED VIEW 1 / 1



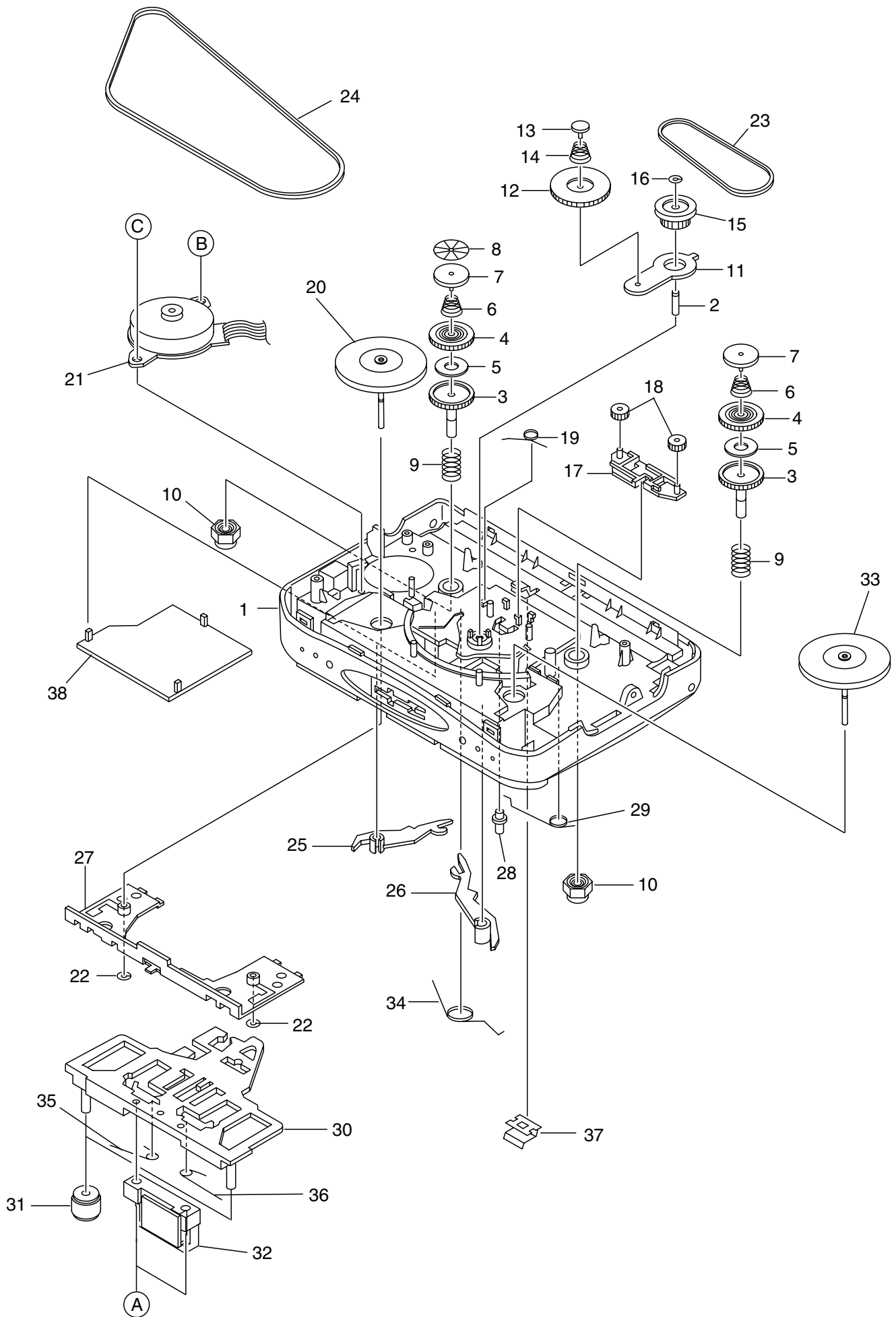
MECHANICAL PARTS LIST 1 / 1

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
1	8A-HKF-001-010		LID,CASS P SIL
2	8A-HR8-002-010		WINDOW,CASS
3	8A-HR8-213-010		SPR-T,CASS
4	8A-HR8-603-010		RBN-CORD,4P MOTOR
5	8A-HR8-216-010		HLDR,DC
6	8A-HR8-210-010		SPR-T,LOCK
7	8A-HR8-208-010		PLATE,LOCK
8	8A-HR8-005-110		KNOB,SL OPEN
9	8A-HR8-211-010		SPR-T,RTRY
10	8A-HR8-201-010		LEVER,ASSY REV
11	8A-HR8-212-010		SPR-E,EJECT
12	8A-HR8-215-010		HLDR,HP
13	8A-HR8-218-010		BAT-CONTACT,M
14	8A-HR8-217-010		BAT-CONTACT,P
15	8A-HR9-004-010		KEY,CONT
16	8A-HR8-008-010		LID,BAT SIL
17	8A-HKG-003-010		CAP, CONT RV
18	8A-HKG-001-010		CABI,REAR 107 SIL
19	8A-HR8-011-010		KNOB,SL
20	8A-HKG-002-010		PANEL,REAR
21	8A-HKF-004-010		LENS,LED P
22	8A-HR8-004-010		PLATE,HEAD SIL
A	87-067-535-010		SCREW VT+1.4-3.5
B	87-067-388-010		SCREW

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange		

TAPE MECHANISM EXPLODED VIEW 1 / 1



TAPE MECHANISM PARTS LIST 1 / 1

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
1	8A-HR8-003-010		FRAME CENTER
2	S8-505-240-000		GEAR SHAFT
3	S8-505-070-000		REEL GEAR T
4	S8-505-080-000		CLUTCH GEAR
5	S8-505-300-000		FELT
6	S8-505-200-000		CLUTCH SP
7	S8-505-120-000		REEL GEAR BUSH
8	S8-505-290-000		REFLECTING PLATE
9	S8-505-210-000		BRACK TENSION SP
10	S8-000-100-000		REEL CAP
11	S8-505-090-000		FWD GEAR PLATE
12	S8-505-060-000		FWD GEAR
13	S8-505-250-000		GEAR PLATE PIN
14	S8-505-220-000		FWD GEAR SP
15	S8-505-050-000		CENTER GEAR
16	S1-2X2-5X0-25L		L CUT W
17	S8-505-320-000		FF GEAR HOLDER
18	S8-505-330-000		FF GEAR
19	S8-505-310-000		GEAR HOLDER SP
20	S8-550-3K0-000		FLYWHEEL R ASSY
21	87-A91-563-010		MOTOR (IBIGB02)
22	S1-2X2-5X0-1LC		L CUT W
23	SV-500-000-000		SUB BELT
24	SV-190-000-000		MAIN BELT
25	S8-505-100-000		FWD ARM
26	S8-505-110-000		REV ARM
27	S8-505-260-000		SUB CHASSIS
28	S8-505-160-000		REV SELECT
29	S8-505-190-000		SELECT SP
30	S8-505-020-000		HEAD BASE
31	S7-000-080-000		PINCH ROLLER
32	87-A91-019-010		HEAD ASSY (PH8ZM-3)
33	S8-550-4K0-000		FLYWHEEL L ASSY
34	S8-300-160-000		HEAD BASE SP
35	S8-300-170-000		PINCH SP FWD
36	S8-500-090-000		PINCH SP REV
37	8A-HR8-214-010		SPR-P CASS
38	S8-505-130-000		COVER
A	S1-PB1-7X5-500		SCREW 1.7-5.5
B	S3-PY1-7X2-500		SCREW 1.7-2.5
C	S3-PB1-7X3-000		SCREW

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