

# SERVICE MANUAL

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STEREO RADIO  
CASSETTE PLAYER

BASIC TAPE MECHANISM : 4ZM-2 P13NC

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- This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-001-427-5T1).

## SPECIFICATIONS

<b>Frequency range :</b>	FM: 87.5 – 108 MHz AM: 530 – 1710 MHz <YL> AM: 530 – 1605 MHz <YH,YJ>
<b>Maximum output :</b>	15 mW + 15 mW (EIAJ 32 ohm) Speaker: 250 mW (EIAJ/8 ohm)
<b>Power source :</b>	DC 3V using two R6 (size AA) batteries AC house current using the optional AC adaptor Aiwa AC-D302
<b>Speaker :</b>	Diameter 50 mm (2 inches), 8 ohm
<b>Maximum dimensions :</b>	116.4 (W) x 92 (H) x 42 (D) mm (4 <sup>5</sup> / <sub>8</sub> x 3 <sup>5</sup> / <sub>8</sub> x 1 <sup>11</sup> / <sub>16</sub> in.)
<b>Weight :</b>	Approx. 149.7 g (5 oz) (excluding batteries)

- Design and specifications are subject to change without notice.

## ACCESSORIES / PACKAGE LIST

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
1	8A-HRK-901-010	IB, YL (3L) -C <YL1, YLB>	
1	8A-HRK-902-010	IB, YJ (ESC) -C <YJ>	
1	8A-HRK-903-010	IB, YH (ECC) -C <YH>	
2	84-447-019-310	CLIP, BELT	
3	87-B30-232-010	HEADPHONE, HP-M029 (K) <YH, YJ, YL1>	
3	87-B30-155-210	HEADPHONE, HP-M006 BL (T) <YLB>	

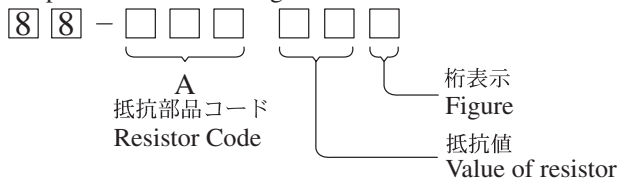
# ELECTRICAL MAIN PARTS LIST

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION	REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
<b>IC</b>							
	87-A21-387-040	C-IC,TA2145F		C601	87-012-141-080		CAP,CHIP S 0.22-16F
	87-A20-851-040	C-IC,TA2111F		C602	87-010-184-080		CAP,CHIP S 3300P(K)
	87-002-232-080	C-IC,NJM2073M(T1)		C603	87-010-197-080		CAP,CHIP S 0.01 DM
				C604	87-010-197-080		CAP,CHIP S 0.01 DM
				C605	87-015-681-040		CAP,E 10-16
<b>TRANSISTOR</b>							
	87-A30-159-080	C-TR,KTA1298Y		C606	87-A10-489-080		CAP,E 220-4 7L SR
	87-026-261-080	C-TR,RN1404		C607	87-010-213-080		CAP,CHIP S 0.015-50 B
	87-026-262-080	C-TR,RN1407		C608	87-010-805-080		CAP,CHIP S 1-16 Z F
	87-026-264-080	C-TR,RN1411		CF101	87-A91-087-010		FLTR,PFS 450A6 B
	89-112-134-040	TR,2SA1213Y		J1	85-HRL-623-010		JACK,3.5 ST BLK
	87-026-235-080	C-TR,DTC114EK		J2	87-A61-124-010		JACK,DC DIA2.75 BLK TC<YH>
				L1	87-A50-538-010		COIL,1UH RF CHOKE
				L2	87-003-089-080		COIL,47UH FL5R200F
				L101	8A-HRJ-607-010		BAR-ANT,MW (KTR)
				L102	8A-HRJ-606-010		COIL,FM RF
				L103	8A-HRJ-605-010		COIL,FM OSC
				L104	87-A50-534-010		COIL,270UH AMOSC
				L105	87-A90-663-010		IFT,MW 5L H6.4
				L601	87-003-089-010		CHOKE COIL
				PVC101	87-A91-507-010		TUN-CAP,20P-160P 16X16 B450KHZ
<b>DIODE</b>							
	87-020-027-080	C-DIODE, 1SS184		R51	87-A00-530-080		C-RES,S 180-1/10W F
	87-A40-630-040	C-DIODE, RB411D		SFR51	87-024-197-010		SEMI-FIXED RESISTOR,1K
				SP601	87-A91-782-010		SPKR,50 8OHM
				SW1	87-A90-133-110		SW,LEAF LSA1120JAU
				SW2	87-A90-216-010		SW,SL 2-2-3 SK230
				VR1	87-A90-981-010		VR,RTRY 20KBX1
				W1	8A-HRK-604-010		WIRE,FLAT 2P
				W2	8A-HRK-603-010		WIRE,FLAT 6P
<b>MAIN C.B</b>							
	87-A90-988-010	FLTR,KMFC5153 T6-Z		<b>FRONT C.B</b>			
BPF101	87-A91-680-010	FLTR,GFMB5-C3		LED451	87-A91-715-040		C-LED,17-21VRC/TR8 (HT) RED
C1	87-010-180-080	CAP,CHIP S 1500P-50 K B		SW401	87-036-145-080		C-SW,SL 1-1-3
C2	87-010-180-080	CAP,CHIP S 1500P-50 K B					
C5	87-010-499-040	CAP,E 22-6.3 GAS					
C6	87-015-674-040	CAP,E 22-6.3M SRA					
C7	87-010-189-080	CAP,CHIP S 8200P-50 K B					
C8	87-010-189-080	CAP,CHIP S 8200P-50 K B					
C11	87-010-805-080	CAP,CHIP S 1-16 Z F					
C12	87-010-805-080	CAP,CHIP S 1-16 Z F					
C13	87-010-180-080	CAP,CHIP S 1500P-50 K B					
C14	87-010-180-080	CAP,CHIP S 1500P-50 K B					
C15	87-015-676-040	CAP,E 47-6.3					
C16	87-010-196-080	CAP,CHIP S 0.1-25					
C17	87-010-805-080	CAP,CHIP S 1-16 Z F					
C20	87-010-805-080	CAP,CHIP S 1-16 Z F					
C21	87-A10-489-040	CAP,E 220-4 7L SR					
C22	87-A10-489-040	CAP,E 220-4 7L SR					
C23	87-A10-489-040	CAP,E 220-4 7L SR					
C24	87-012-142-080	C-CAP,S 0.33-16					
C25	87-012-142-080	C-CAP,S 0.33-16					
C51	87-010-805-080	CAP,CHIP S 1-16 Z F					
C101	87-010-146-080	CAP,CHIP S 2P-50 C CH GRM<YL>					
C101	87-010-147-080	CAP,CHIP S 3P-50 CH<YH,YJ>					
C102	87-012-150-080	CAP,CHIP S 20P-50 CH					
C103	87-012-159-080	CAP,CHIP S 24P-50 CH					
C104	87-010-145-080	CAP,CHIP S 1P-50 CH<YL>					
C104	87-010-147-080	CAP,CHIP S 3P-50 CH<YH,YJ>					
C105	87-010-197-080	CAP,CHIP S 0.01 DM					
C106	87-016-087-080	CAP,CHIP S 0.47-16 Z F					
C107	87-010-805-080	CAP,CHIP S 1-16 Z F					
C108	87-010-178-080	CAP,CHIP S 1000P					
C109	87-010-805-080	CAP,CHIP S 1-16 Z F					
C110	87-010-196-080	CAP,CHIP S 0.1-25					
C111	87-010-196-080	CAP,CHIP S 0.1-25					
C112	87-010-428-080	CAP,CHIP S 0.015-25 B					
C113	87-010-428-080	CAP,CHIP S 0.015-25 B					
C114	87-016-083-080	CAP,CHIP S 0.15-16 K R					
C115	87-016-083-080	CAP,CHIP S 0.15-16 K R					
C116	87-015-688-040	CAP,E 4.7-35 TAPG					
C117	87-010-452-080	CAP,CHIP S 1-16					
C118	87-010-178-080	CAP,CHIP S 1000P					
C119	87-010-503-040	CAP,E 220-4 GAS					
C128	87-012-140-080	CAP 470P					
C130	87-012-140-080	CAP 470P					
C131	87-012-153-080	C-CAP,S 120P-50 CH					
C132	87-012-150-080	C-CAP,S 6P-50 CH					
C401	87-016-083-080	CAP,CHIP S 0.15-16 K R					
C402	87-016-083-080	CAP,CHIP S 0.15-16 K R					

○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

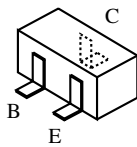
Chip Resistor Part Coding



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 : A 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

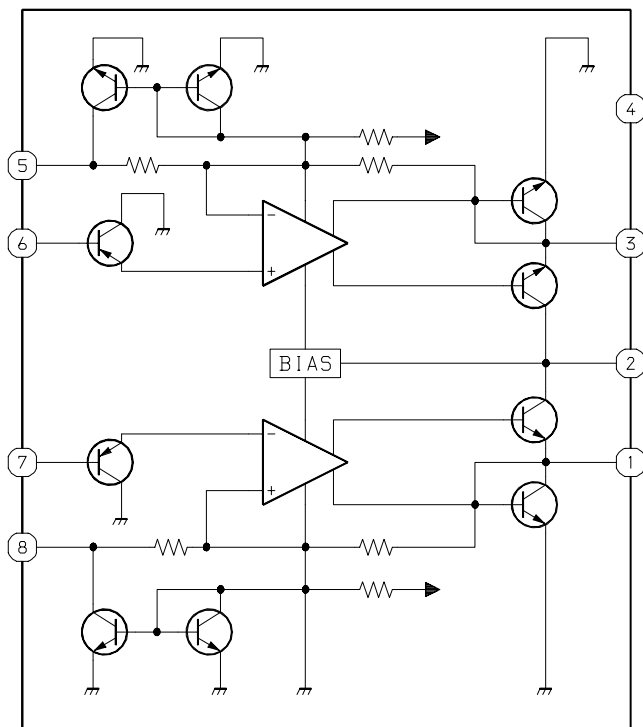
TRANSISTOR ILLUSTRATION



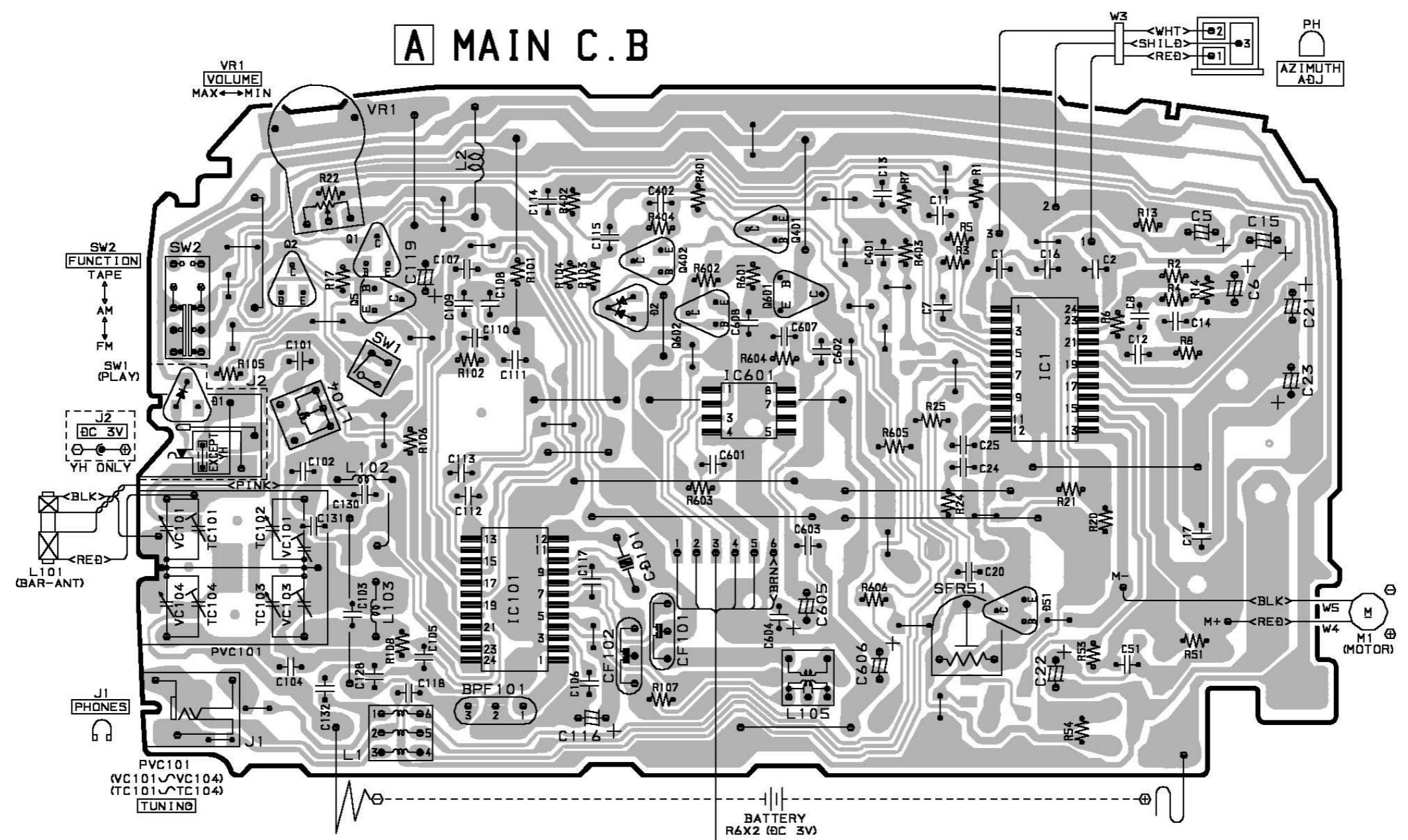
- RN1411
- RN1404
- RN1407
- 2SA1213Y
- DTC114EK
- KTA1298Y

IC BLOCK DIAGRAM

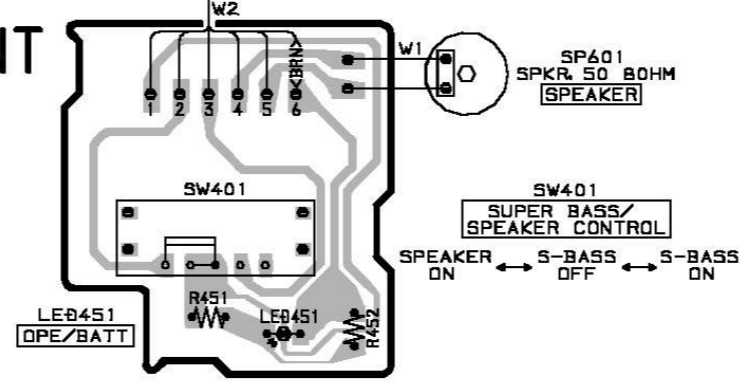
IC, NJM2073M (T1)



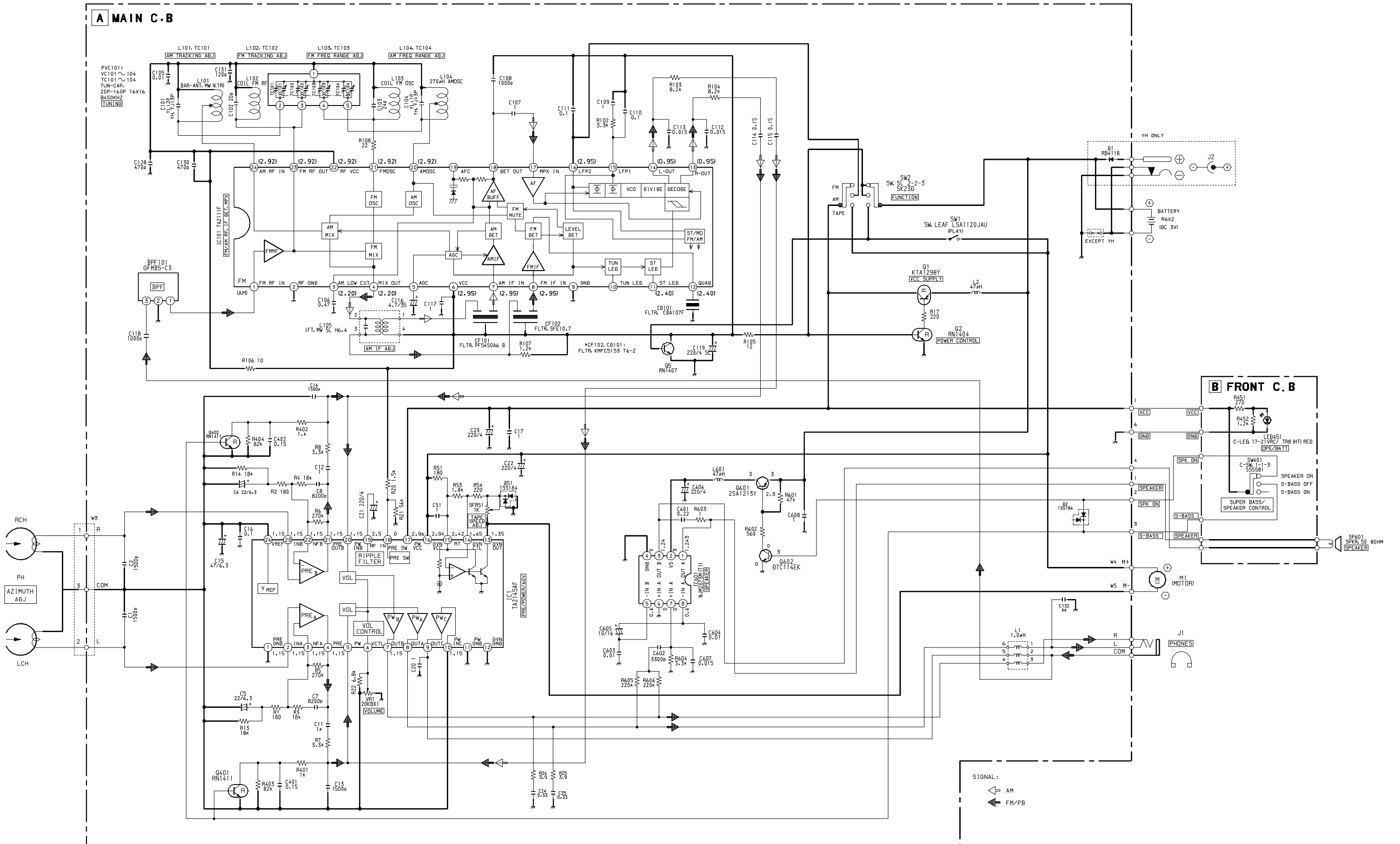
### A MAIN C.B



### B FRONT C.B

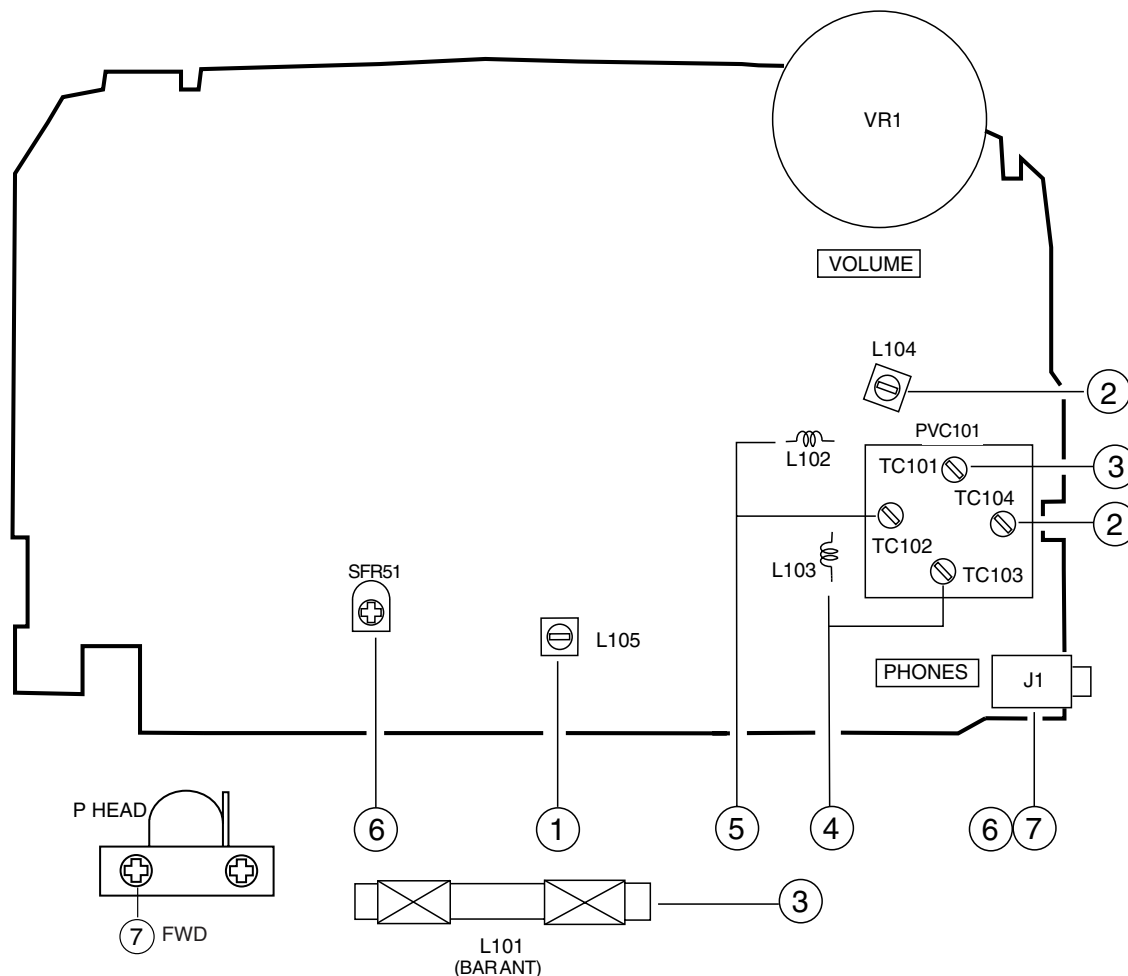


SCHEMATIC DIAGRAM



# ADJUSTMENT

## A MAIN C.B



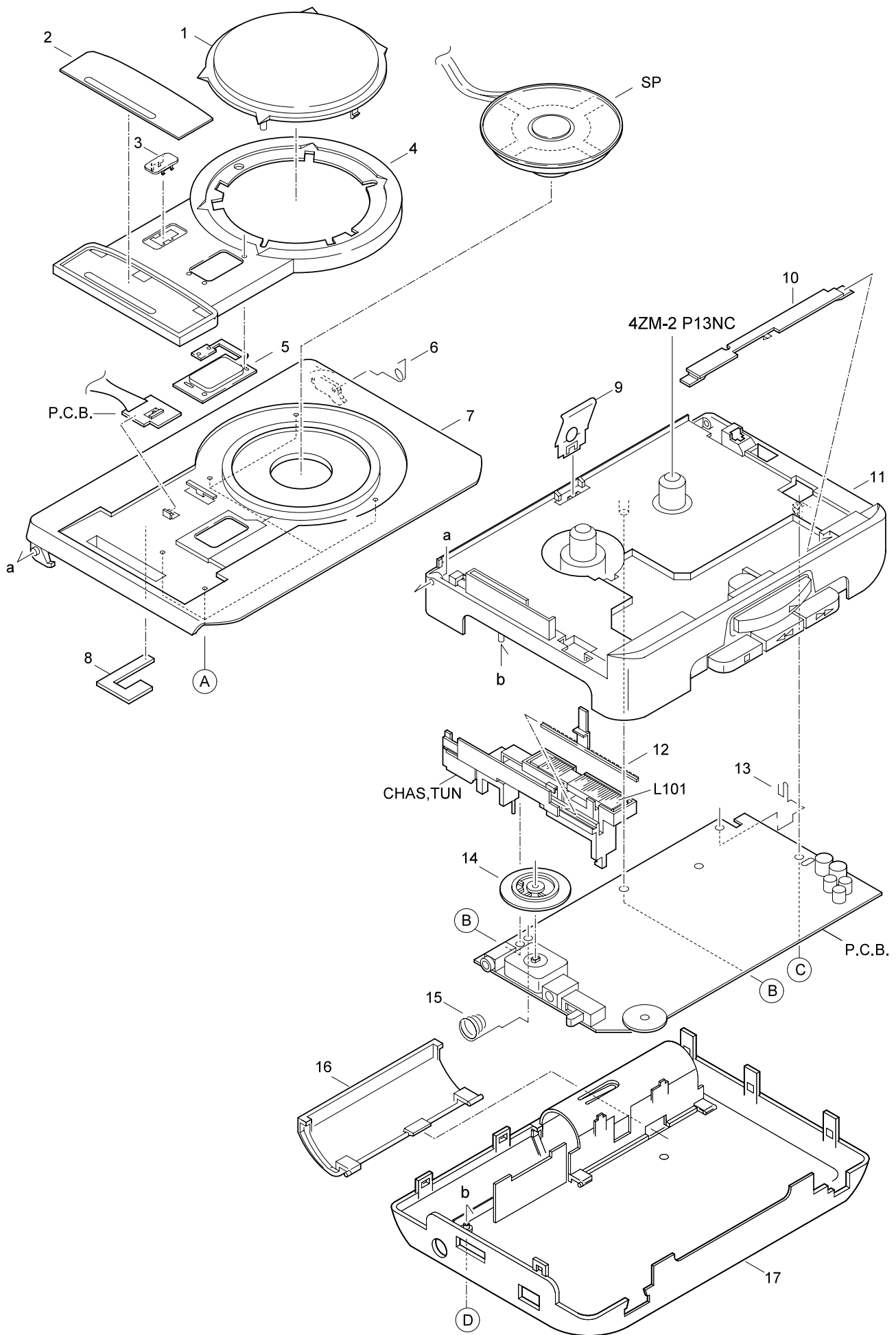
### <TUNER SECTION>

1. AM IF Adjustment  
L105 ..... 455 kHz
2. AM Frequency range Adjustment  
L104 ..... 517 kHz  $\pm$  5 kHz  
TC104 ..... 1770 kHz  $\pm$  7 kHz <YL>  
TC104 ..... 1670 kHz  $\pm$  7 kHz <YH,YJ>
3. AM Tracking Adjustment  
L101 ..... 600 kHz  
TC101 ..... 1400 kHz
4. FM Frequency range Adjustment  
L103 ..... 87.0 MHz  $\pm$  0.1 MHz  
TC103 ..... 109.0 MHz  $\pm$  0.1 MHz <YL>  
TC103 ..... 108.8 MHz  $\pm$  0.1 MHz <YH,YJ>
5. FM Tracking Adjustment  
L102 ..... 88.0 MHz  
TC102 ..... 108.0 MHz

### <TAPE PLAYER SECTION>

6. Tape Speed Adjustment  
Settings : • Test tape : TTA-100 (Tape center)  
• Test point : PHONES JACK (J1)  
• Volume : NON-CLIP (MAX-10dB)  
• Function : TAPE  
• Adjustment location : SFR51  
Method : Play back the test tape and adjust SFR51 so that the frequency becomes 3000 Hz  $\pm$  10 Hz(FWD). Then confirm WOW is less than 0.50%.
7. Head Azimuth Adjustment  
settings : • Test tape : TTA - 330 / TTA - 420  
• Test point : PHONES JACK (J1)  
• Volume : MAX  
• Function : TAPE  
• S-BASS : OFF  
• Adjustment location : Head azimuth adjustment screw  
Method : Play back the 8 kHz signal of the test tape and adjust the screw so that the output becomes maximum.

# MECHANICAL EXPLODED VIEW 1 / 1





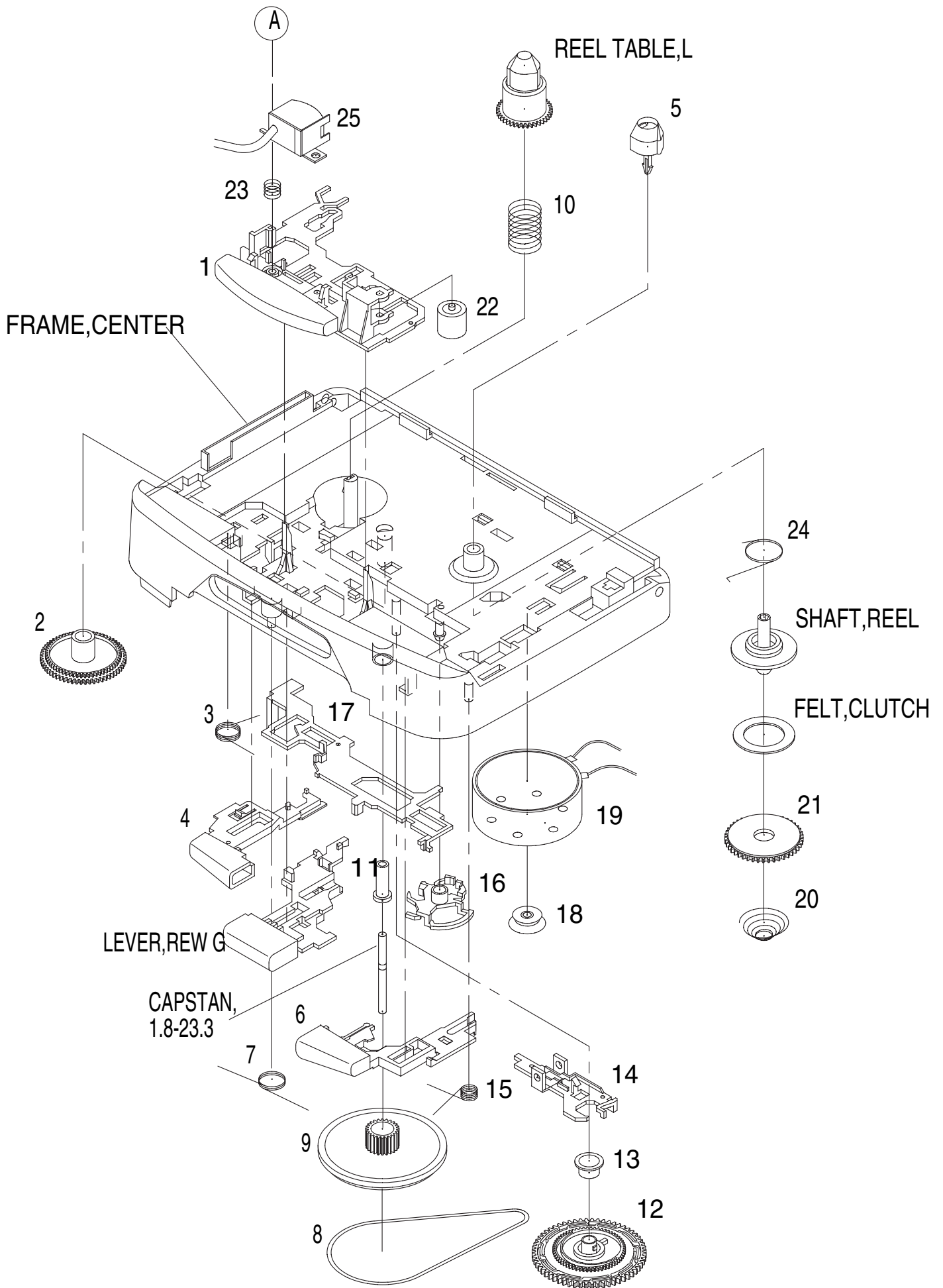
# MECHANICAL PARTS LIST 1 / 1

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
1	8A-HRK-003-010		PANEL, SPEAKER
2	8A-HRK-004-010		WINDOW, TUNE<YH, YJ>
2	8A-HRK-010-010		WINDOW, TUNE YL<YL>
3	8A-HRK-006-010		KNOB, SL SBASS
4	8A-HRK-002-010		PANEL, SBASS
5	8A-HRK-005-010		WINDOW, CASS
6	86-HRM-205-010		SPR-T, CLICK
7	8A-HRK-001-010		LID, CASS
8	8A-HRK-008-010		PLATE, INDICATOR
9	8A-HRL-202-010		SPR-P, CASS
10	87-HRR-206-010		PLATE, HEAD J034
11	88-HRJ-038-010		FRAME, CENTER J034
12	86-HRM-009-210		POINTER, TUN
13	86-HRM-202-010		BAT-CONTACT, (+)
14	86-HRM-006-010		KNOB, RTRY TUN
15	8Z-HRM-205-010		BAT, CONTACT (-)
16	8Z-HRL-010-010		LID, BATT
17	8Z-HRM-010-010		CABI, REAR SIL<YL, YJ>
17	8Z-HRM-007-010		CABI, REAR YH<YH>
A	87-067-384-010		SCREWVT1.4-3.5HL
B	87-067-732-010		TAPPING SCREW, VT1.4-3
C	87-B10-044-010		V+1.7-6.5
D	87-067-691-010		SCREW VT+1.7-6

## 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	84-ZM2-012-110		LEVER, PLAY G
2	84-ZM2-211-110		GEAR, CONNECT
3	84-ZM2-222-110		SPR-T, PLAY
4	84-ZM2-015-110		LEVER, STOP G
5	84-ZM2-216-210		REEL TABLE, R
6	84-ZM2-013-110		LEVER, FF G
7	84-ZM2-223-110		SPR-T, REW STOP
8	84-ZM2-232-310		BELT, MAIN
9	84-ZM2-221-110		FLY-WHL, P2
10	84-ZM2-228-310		SPR-C, BT
11	84-ZM2-220-110		BRG, P
12	84-ZM2-210-210		GEAR, AUTO
13	84-ZM2-218-110		CAP, GEAR AUTO
14	84-ZM2-208-510		LEVER, SHIFT
15	84-ZM2-224-110		SPR-T, FF LOCK
16	84-ZM2-207-310		LEVER, AUTO
17	84-ZM2-206-410		LEVER, LOCK
18	84-ZM2-219-010		PULLEY, MOTOR
19	87-A91-379-010		MOT, BCY3B-13
20	84-ZM2-226-510		SPR-C, CLUTCH
21	84-ZM2-212-010		GEAR, CLUTCH
22	84-ZM2-233-110		ROLLER ASSY, PINCH
23	84-ZM2-227-310		SPR-C, AZIMUTH
24	84-ZM2-225-010		SPR-T, AUTO FIND
25	87-A91-529-010		HEAD, TC-950
A	84-ZM2-252-010		S-SCREW, AZI-2-6.4 C

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