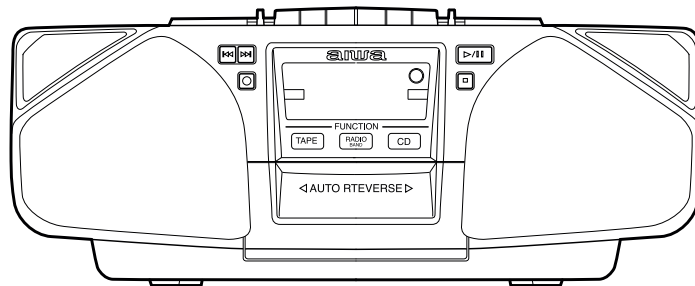




**CSD-FD71** U  
**CSD-FD73** K,EZ



# SERVICE MANUAL

COMPACT DISC STEREO  
CASSETTE RECORDER

BASIC TAPE MECHANISM : TN-21ZVC-2000  
BASIC CD MECHANISM : CMS-B31TG6

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual", (S/M Code No. 09-001-425-4T1).
- If requiring information about the CD mechanism, see Service Manual of CMS-B31TG6, (S/M Code No. 09-001-341-1N2).

**aiwa**  
S/M Code No. 09-003-425-4R1

REVISION  
DATA

## SPECIFICATIONS

### Tuner section

#### Frequency range

**FM :** 87.5 MHz - 108 MHz  
Antenna : Rod antenna

**AM<U> :** 530 / 531 kHz - 1,710 / 1,602 kHz  
(10/9 kHz/step)

**MW<K, EZ> :** 531 / 530 kHz - 1,602 / 1,710 kHz  
(9 / 10 kHz / step)

**LW<K, EZ> :** 153 - 288 kHz  
Antenna : Ferrite bar antenna

### Deck section

#### Track format

4 tracks, 2 channels

#### Frequency range

Normal tape : 50 Hz–12,500 Hz (EIAJ)

#### Recording system

AC bias

#### Erasing system

Magnet erase

#### Heads

Recording / Playback head x 1 /  
Erasure head x 1

### CD player section

#### Disc

Compact disc

#### Scanning method

Non-contact optical scanner  
(semiconductor laser)

### General

#### Speaker

100 mm cone type (2), 60 mm cone type (2)

#### Output

Headphones jack (stereo mini-jack)

#### Power output

**U :**  
2.5 W + 2.5 W (EIAJ 7 ohms DC)

**K, EZ :**  
5 W + 5 W (DIN MUSIC POWER)  
4.5 W + 4.5 W (EIAJ 3.2 ohms, T.H.D. 10%)  
3.3 W + 3.3 W (DIN 1% Rated Power)

#### Power requirements

**U :**  
DC 12 V using eight R14 (size C) batteries,  
AC 120 V, 60 Hz

**K, EZ :**  
DC 12 V using eight R14 (size C) batteries,  
AC 230 V, 50 Hz

#### Power consumption

**U :**  
12 W

**K, EZ :**  
22 W

#### Dimensions (W x H x D)

460 (W) x 191.9 (H) x 261.2 (D) mm  
(18<sup>1</sup>/<sub>8</sub> X 7<sup>5</sup>/<sub>8</sub> X 10<sup>3</sup>/<sub>8</sub> in.)

#### Weight

4 kg (8 lbs. 13 oz.) (excluding batteries)

• Design and specifications are subject to change without notice.

## ACCESSORIES / PACKAGE LIST

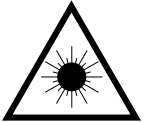
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
	1 8A-CH4-903-010	IB, U (ESF)	B<U>
	1 8A-CH4-905-010	IB, K (E)	B<K>
	1 8A-CH4-906-010	IB, EZ (9L)	B<EZ>
△	2 87-A80-109-010	AC CORD, HK7281	BLK U<U>
△	2 87-A80-034-010	AC CORD SET ASSY, K	W/F MAY-BG<K>
△	2 87-A80-036-010	AC CORD SET ASSY, E	W/FLTR V<EZ>
△	3 87-A90-312-010	PLUG, CONVERSION	WTN-1157R1<EZ>

## PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

### WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

### VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylit-tävälle näkymättömälle lasersäteilylle.

### WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

### CAUTION

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

### ATTENTION

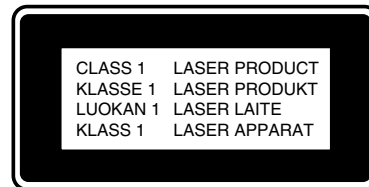
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

### ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

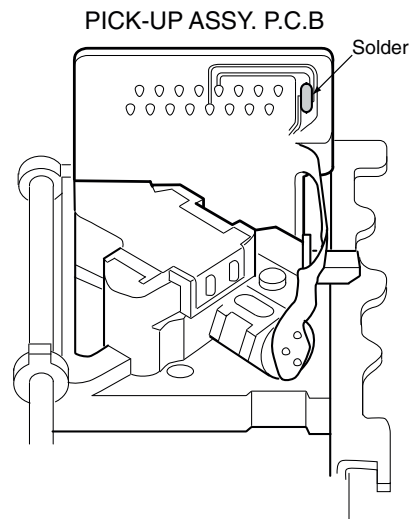
The CLASS 1 LASER PRODUCT label is located on the rear exterior.



## Precaution to replace Optical block

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

- 1) After the connection, remove solder shown in the right figure.



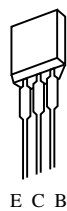
# ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
<b>IC</b>				C811	87-010-178-080		CHIP CAP 1000P
	87-A21-550-010	IC,TA2149N		C812	87-010-178-080		CHIP CAP 1000P
	87-A21-185-040	C-IC,LC72121M		C816	87-010-180-080		C-CER 1500P
	87-A21-064-010	IC,LA4227<U>		C817	87-010-180-080		C-CER 1500P
	87-A21-090-010	IC,LA4600<K,EZ>		C821	87-010-401-080		CAP, ELECT 1-50V
	87-A21-520-040	C-IC,M61509FP		C822	87-010-401-080		CAP, ELECT 1-50V
	87-A20-446-010	C-IC,LA9241ML		C823	87-010-178-080		CHIP CAP 1000P
	87-A20-459-010	C-IC,LC78622ED		C824	87-010-178-080		CHIP CAP 1000P
	87-A21-093-010	IC,LA6541D		C829	87-010-178-080		CHIP CAP 1000P
	8A-CH4-661-010	C-IC,LC867132V-5G68		C830	87-010-178-080		CHIP CAP 1000P
	87-A21-431-010	IC,BA4560N		C833	87-018-195-080		CAP, CER 1200P-16V
<b>TRANSISTOR</b>				C834	87-010-248-080		CAP, ELECT 220-10V
	89-327-143-080	TR,2SC2714 (0.1W)		C843	87-010-197-080		CAP, CHIP 0.01 DM
	87-026-447-080	TR,2SC1740SR		C844	87-018-124-080		CAP, CER 270P-50V
	89-111-624-080	TR,2SA1162Y		C845	87-010-178-080		CHIP CAP 1000P
	87-026-213-080	CHIP-TR,DTC114YK		C846	87-010-263-080		CAP, ELECT 100-10V
	89-327-125-080	CHIP TR,2SC2712GR		C851	87-010-186-080		CAP,CHIP 4700P
	89-318-154-080	TR,2SC1815Y(0.4W)		C852	87-010-178-080		CHIP CAP 1000P
	89-112-965-080	TR,2SA1296GR		C853	87-018-211-080		CAP, CER 0.01-50
	87-026-463-080	TR,2SA933SRS		CN201	87-099-018-010		CONN,16P
	87-026-291-080	TR,DTC124XS		CN801	87-A60-110-010		CONN,4P V S2M-4W
	89-213-702-080	TR,2SB1370E		CNA302	8A-CH4-629-010		CONN ASSY, 6P MA-TU
	87-026-462-080	TR,2SC1740S		CNA801	8A-CD9-630-010		CONN ASSY, 4P RPH
	89-109-332-380	TR,2SA933RS		FC201	8A-CD9-620-010		FF-CABLE, 16P FR-MAIN
	89-113-187-080	TR,2SA1318TU		L801	87-007-342-010		COIL,OSC 85K BIAS
	87-026-239-080	TR,DTC114TK		SW801	8Z-CD9-609-010		SW,SL 1-6-2 PS62D01
	87-026-210-080	TR,DTC144EK		<b>CD C.B</b>			
	87-026-464-080	TR,DTC114TS (0.3W)		C30	87-010-260-080		CAP, ELECT 47-25V
<b>DIODE</b>				C263	87-010-178-080		CHIP CAP 1000P
	87-020-465-080	DIODE,1SS133 (110MA)		C264	87-010-178-080		CHIP CAP 1000P
	87-017-072-080	ZENER,HZS3B1		C265	87-010-263-080		CAP, ELECT 100-10V<U>
	87-027-703-080	ZENER,HZ7A1L<U>		C266	87-010-545-080		CAP, ELECT 0.22-50V<K,EZ>
	87-A40-648-080	ZENER,MTZJ8.2A		C266	87-010-263-080		CAP, ELECT 100-10V<U>
	87-070-345-080	DIODE,IN4148		C267	87-010-545-080		CAP, ELECT 0.22-50V<K,EZ>
	87-017-978-080	DIODE,1N4003		C267	87-010-112-080		CAP, ELECT 100-16V<U>
	87-027-702-080	DIODE,ZENER HZ6C2L (200MA)		C268	87-010-112-080		CAP, ELECT 100-16V<U>
	87-A40-465-010	DIODE,FR202		C271	87-010-237-080		CAP, ELECT 1000-16V<K,EZ>
	87-A40-234-080	ZENER,MTZJ5.6A<K,EZ>		C271	87-010-221-080		CAP, ELECT 470-10V<U>
<b>MAIN C.B</b>				C272	87-010-237-080		CAP, ELECT 1000-16V<K,EZ>
C211	87-010-805-080	CAP, S 1-16		C272	87-010-221-080		CAP, ELECT 470-10V<U>
C212	87-010-805-080	CAP, S 1-16		C277	87-010-404-080		CAP, ELECT 4.7-50V<K,EZ>
C215	87-016-460-080	C-CAP,S 0.22-16 B		C278	87-010-405-080		CAP, ELECT 10-50V<U>
C216	87-016-460-080	C-CAP,S 0.22-16 B		C278	87-010-405-080		CAP, ELECT 10-50V<U>
C231	87-010-213-080	C-CAP,S 0.015-50 B		C278	87-010-263-080		CAP, ELECT 100-10V<K,EZ>
C232	87-010-213-080	C-CAP,S 0.015-50 B		C279	87-010-263-080		CAP, ELECT 100-10V<K,EZ>
C233	87-A10-201-080	C-CAP,S0.33-16 KB		C279	87-010-385-080		CAP, ELECT 220-25V<U>
C234	87-A10-201-080	C-CAP,S0.33-16 KB		C301	87-016-495-000		CAP,E 3300-25 M SMG
C235	87-016-669-080	C-CAP,S 0.1-25 K B		C306	87-010-404-080		CAP, ELECT 4.7-50V
C236	87-016-669-080	C-CAP,S 0.1-25 K B		C307	87-010-401-080		CAP, ELECT 1-50V
C237	87-010-371-080	CAP, ELECT 470-6.3M		C308	87-010-221-080		CAP, ELECT 470-10V
C239	87-010-197-080	CAP, CHIP 0.01 DM		C311	87-010-265-080		CAP, ELECT 33-16M
C240	87-010-197-080	CAP, CHIP 0.01 DM		C312	87-010-385-080		CAP, ELECT 220-25V
C247	87-010-401-080	CAP, ELECT 1-50V		C321	87-010-197-080		CAP, CHIP 0.01 DM
C248	87-010-401-080	CAP, ELECT 1-50V		C322	87-010-263-080		CAP, ELECT 100-10V
C310	87-010-248-080	CAP, ELECT 220-10V		C325	87-010-405-080		CAP, ELECT 10-50V
C316	87-010-263-080	CAP, ELECT 100-10V M 11L SME<K,EZ>		C401	87-010-403-080		CAP, ELECT 3.3-50V
C317	87-010-197-080	CAP,S 0.01-25 KB C2012<K,EZ>		C402	87-010-197-080		CAP, CHIP 0.01 DM
C801	87-010-248-080	CAP, ELECT 220-10V		C403	87-010-263-080		CAP, ELECT 100-10V
C805	87-012-365-080	C-CAP,S 0.027-25VBK		C404	87-010-248-080		CAP, ELECT 220-10V
C806	87-012-365-080	C-CAP,S 0.027-25VBK		C405	87-010-197-080		CAP, CHIP 0.01 DM
C807	87-010-405-080	CAP, ELECT 10-50V		C406	87-010-374-080		CAP, ELECT 47-10V
C808	87-010-405-080	CAP, ELECT 10-50V		C407	87-010-178-080		CHIP CAP 1000P
C809	87-010-401-080	CAP, ELECT 1-50V		C408	87-010-198-080		CAP, CHIP 0.022
C810	87-010-401-080	CAP, ELECT 1-50V		C409	87-010-248-080		CAP, ELECT 220-10V
				C410	87-010-263-080		CAP, ELECT 100-10V
				C411	87-A11-177-080		C-CAP,S 0.15-16 K B
				C412	87-010-401-080		CAP, ELECT 1-50V
				C413	87-016-369-080		C-CAP,S 0.033-25 B K
				C414	87-010-405-080		CAP, ELECT 10-50V

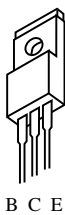


REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
TUNER C.B				X1	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309
C1	87-010-314-080		C-CAP,S 22P-50V				
C2	87-010-316-080		C-CAP,S 33P-50 CH	H.P.			C.B
C3	87-010-314-080		C-CAP,S 22P-50V				
C5	87-016-669-080		C-CAP,S 0.1-25 K B	C275	87-016-280-080		CAP,E 3.3-50 M BP SME
C6	87-010-313-080		CAP, CHIP 18P	C276	87-016-280-080		CAP,E 3.3-50 M BP SME
C7	87-014-049-080		CAP,PP 470P-100 J	CN204	8A-CH4-687-010		CONN,4P V 2.5
C8	87-010-178-080		CHIP CAP 1000P	CNA203	8A-CD9-628-010		CONN ASSY,3P MA-HP
C10	87-010-197-080		CAP, CHIP 0.01 DM	CNA204	8A-CH4-633-010		CONN ASSY,4P SP
C11	87-010-197-080		CAP, CHIP 0.01 DM	J251	87-A60-569-010		JACK,HTJ-035-18
C12	87-010-197-080		CAP, CHIP 0.01 DM				
C13	87-010-150-080		C-CAP,S 6P-50 CH	KEY			C.B
C14	87-010-303-080		C-CAP,S 330P-50CH				
C15	87-010-178-080		CHIP CAP 1000P	CN605	87-A60-109-010		CONN,2P V S2M-2W
C16	87-010-374-080		CAP, ELECT 47-10V	S614	87-A91-704-080		SW,TACT EVQ 214 05R
C17	87-010-198-080		CAP, CHIP 0.022	S615	87-A91-704-080		SW,TACT EVQ 214 05R
C18	87-015-835-080		C-CAP,0.047 D				
C19	87-010-263-080		CAP, ELECT 100-10V	BATT1			C.B
C20	87-010-404-080		CAP, ELECT 4.7-50V				
C21	87-010-197-080		CAP, CHIP 0.01 DM	C901	87-018-205-080		CAP, CERA-SOL 0.022
C22	87-010-197-080		CAP, CHIP 0.01 DM	C902	87-018-205-080		CAP, CERA-SOL 0.022
C23	87-010-197-080		CAP, CHIP 0.01 DM	C903	87-018-205-080		CAP, CERA-SOL 0.022
C24	87-010-303-080		C-CAP,S 330P-50CH	C904	87-018-205-080		CAP, CERA-SOL 0.022
C25	87-016-460-080		C-CAP,S 0.22-16 B	CNA901	8A-CD9-627-010		CONN ASSY,3P PWR
C27	87-A11-067-080		C-CAP,S 1-10 K B	△ F901	87-035-347-010		FUSE,2.5A 250 VT<K,EZ>
C28	87-016-669-080		C-CAP,S 0.1-25 K B	△ FC901	87-033-213-010		CLAMP,FUSE SMK<K,EZ>
C29	87-016-669-080		C-CAP,S 0.1-25 K B	△ FC902	87-033-213-010		CLAMP,FUSE SMK<K,EZ>
C30	87-010-220-080		C-CAP,S 0.018-25 K B	△ PT901	8A-CD9-606-010		PT,U 2.5W<U>
C31	87-010-220-080		C-CAP,S 0.018-25 K B	△ PT901	8A-CD9-667-010		PT,E<K,EZ>
C33	87-012-358-080		C-CAP,S 0.47-10 F Z	△ SW901	87-A91-369-010		SW,AC SL 2 2 2 SDKGA41700<K,EZ>
C34	87-012-358-080		C-CAP,S 0.47-10 F Z				
C35	87-015-819-080		CAPACITOR,0.01	BATT2			C.B
C36	87-010-263-080		CAP, ELECT 100-10V				
C37	87-010-197-080		CAP, CHIP 0.01 DM				
C38	87-010-263-080		CAP, ELECT 100-10V	SP			C.B
C39	87-010-404-080		CAP, ELECT 4.7-50V				
C40	87-010-197-080		CAP, CHIP 0.01 DM				
C41	87-010-178-080		CHIP CAP 1000P				
C42	87-010-178-080		CHIP CAP 1000P				
C43	87-010-178-080		CHIP CAP 1000P				
C44	87-010-311-080		CAP 12P<K,EZ>				
C44	87-010-312-080		C-CAP,S 15P-50 CH<U>				
C45	87-010-312-080		C-CAP,S 15P-50 CH				
C46	87-010-197-080		CAP, CHIP 0.01 DM				
C47	87-010-197-080		CAP, CHIP 0.01 DM				
C48	87-010-197-080		CAP, CHIP 0.01 DM				
C49	87-012-140-080		CAP 470P				
C50	87-010-197-080		CAP, CHIP 0.01 DM				
C71	87-010-197-080		CAP, CHIP 0.01 DM				
C72	87-010-263-080		CAP, ELECT 100-10V				
C73	87-010-197-080		CAP, CHIP 0.01 DM				
C75	87-010-197-080		CAP, CHIP 0.01 DM				
C92	87-010-197-080		CAP, CHIP 0.01 DM				
C93	87-010-197-080		CAP, CHIP 0.01 DM				
CF1	87-A91-094-010		FLTR,CDA10.7 MG80A				
CF2	87-008-261-010		FILTER, SFE10.7MA5-A				
CF3	87-008-261-010		FILTER, SFE10.7MA5-A				
CN2	87-099-854-010		CONN,6P S2M-6W				
CN3	87-A60-110-010		CONN,4P V S2M-4W				
D3	87-A40-616-070		VARI-CAP,SVC384 (S/T)				
D4	87-A40-128-080		C-VARI-CAP,HVU202A				
D5	87-A40-128-080		C-VARI-CAP,HVU202A				
L2	87-A50-560-010		COIL,FM BPF(ACD)				
L3	8A-CH4-670-010		BAR-ANT,MW 2B-ACH(COI)				
L4	87-A50-420-010		COIL,MW OSC(SYN)				
L5	87-A50-566-010		COIL,FM RF EX(ACH)				
L6	87-A50-567-010		COIL,FM OSC(ACH)				
L7	87-A91-308-010		FLTR,PCFAZH- 450T (TOK)				
L8	87-005-849-080		COIL,10UH(CECS)				
TC1	87-011-254-080		TRIMER,20P LAR				

# TRANSISTOR ILLUSTRATION



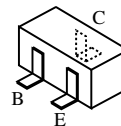
2SA933RS  
2SA933RS  
2SC1740S  
2SC1740SR  
DTC114TS  
DTC124XS



2SB1370E



2SA1296GR  
2SC1815Y



2SA1162Y  
2SC2712GR  
2SC2714  
DTC114TK  
DTC114YK  
DTC144EK



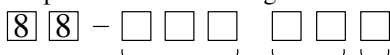
E C B

2SA1318

## ○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



A  
抵抗部品コード  
Resistor Code

桁表示  
Figure  
抵抗値  
Value of resistor

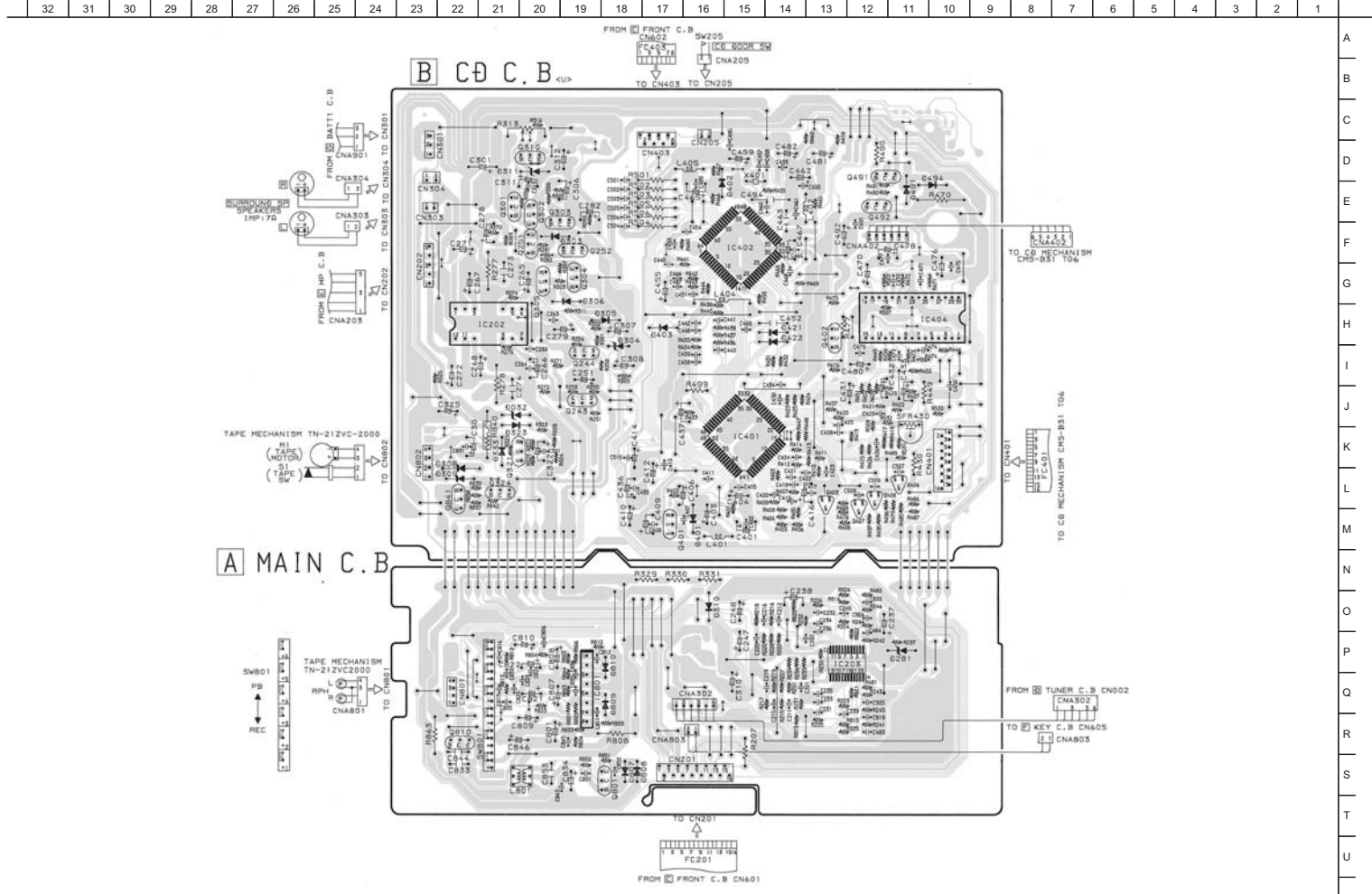
## チップ抵抗 Chip resistor

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





WIRING - 1 (MAIN / CD) <U>

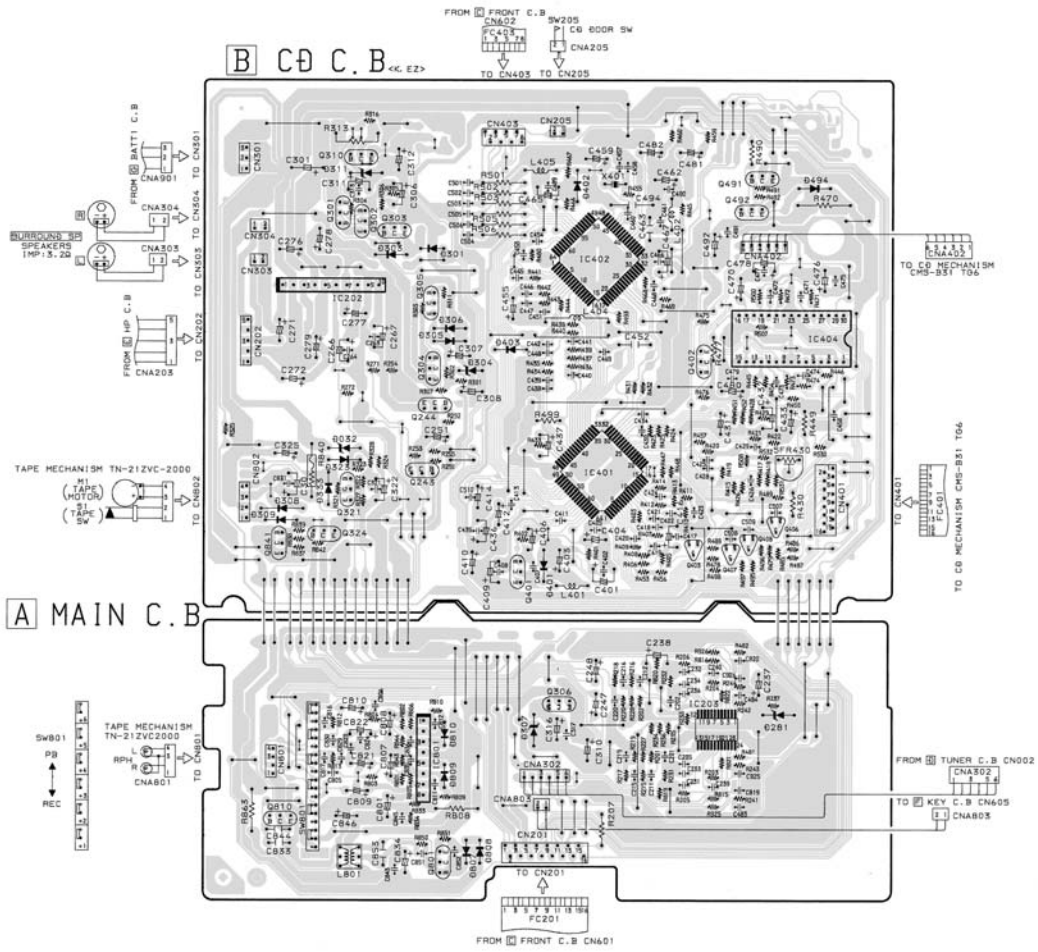




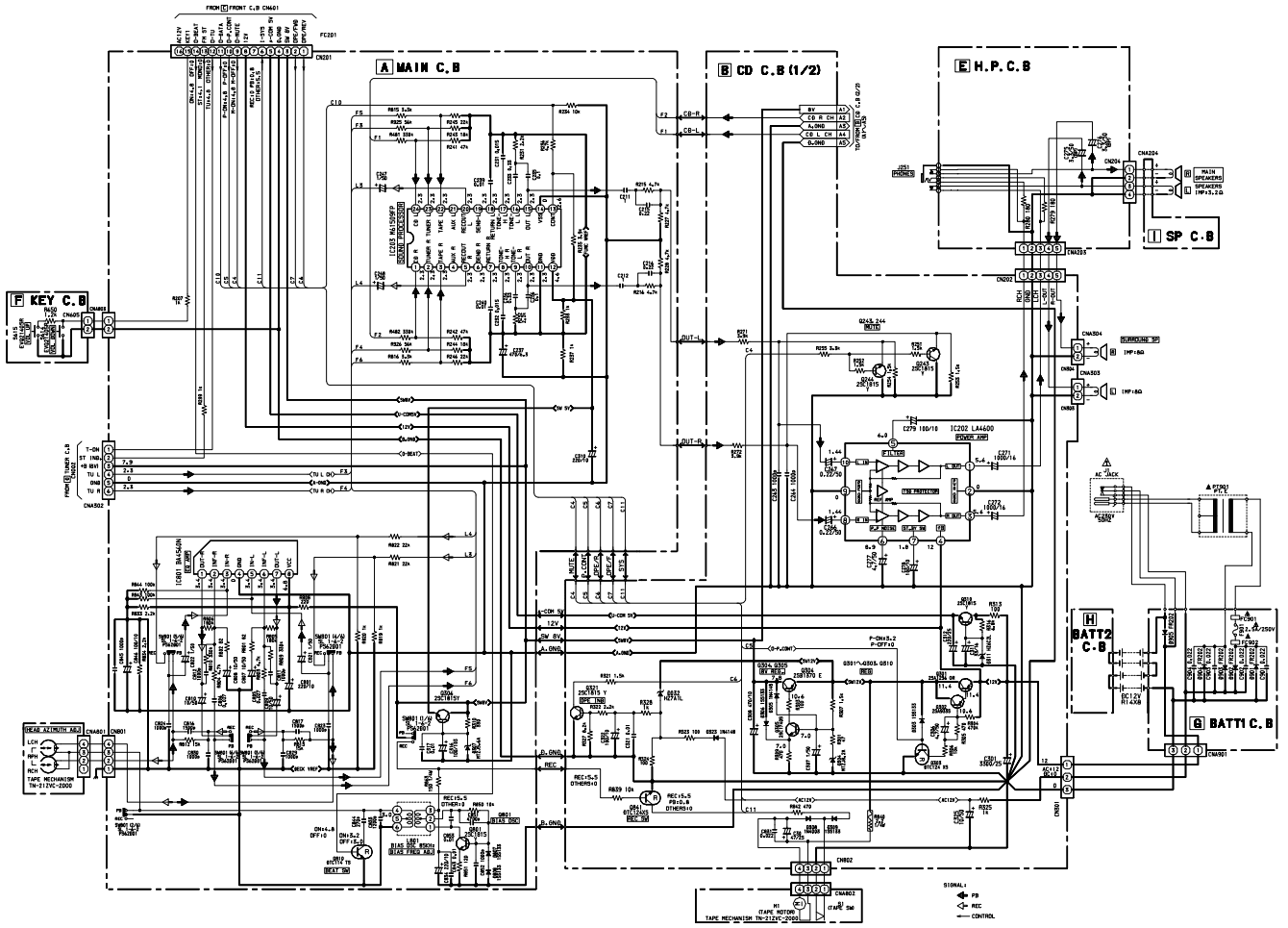


WIRING - 2 (MAIN / CD) <K, EZ>

32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1



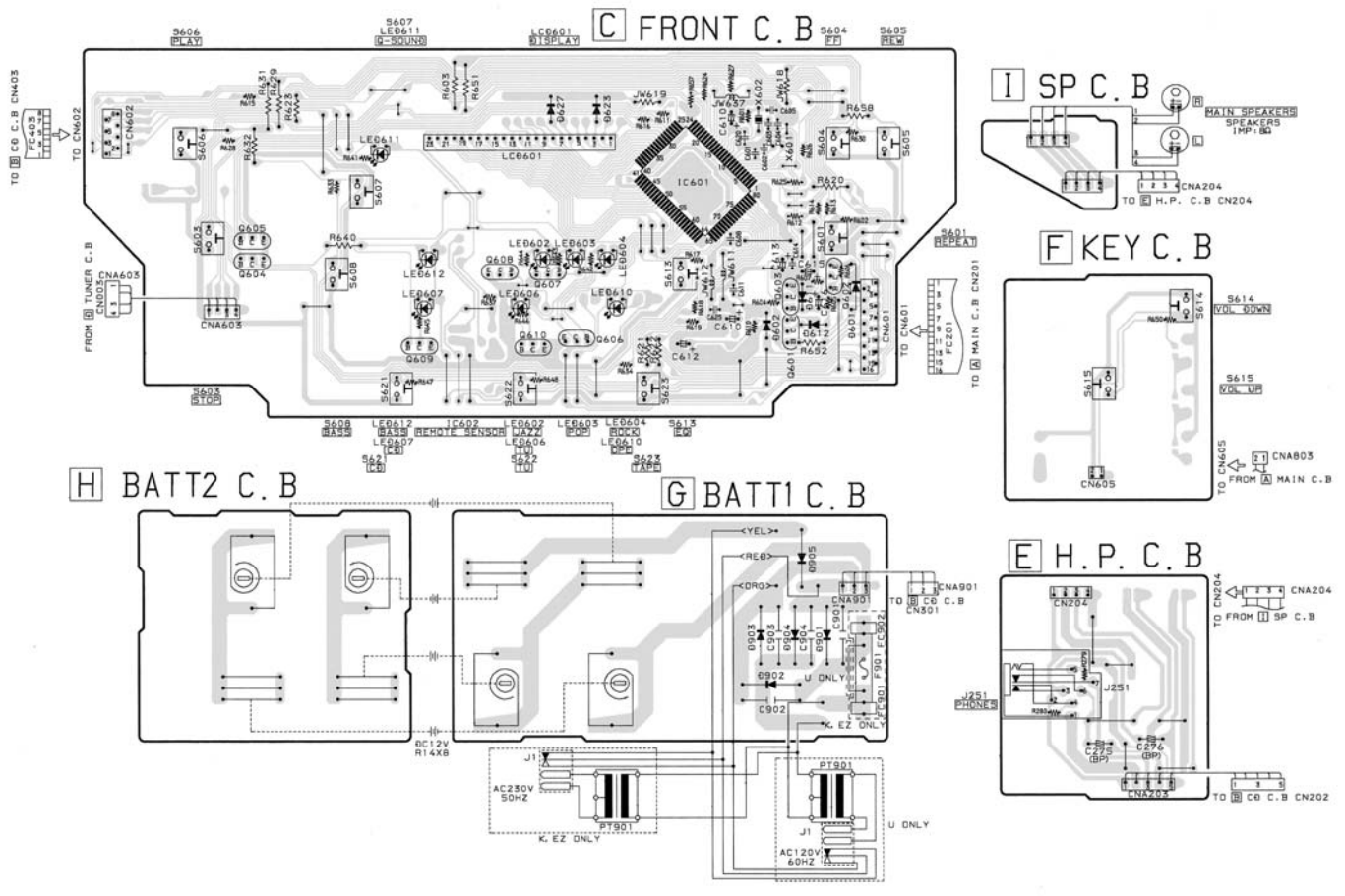
SCHMATIC DIAGRAM - 3 (MAIN / CD (1 / 2) / H.P. / KEY / BATT1 / BATT2 / SP) <K, EZ>





WIRING - 3 (FRONT / H.P. / KEY / BATT1 / BATT2 / SP)

32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---



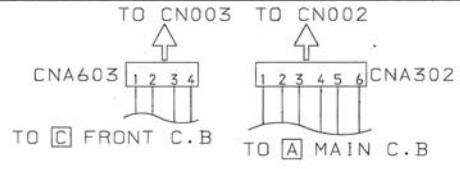
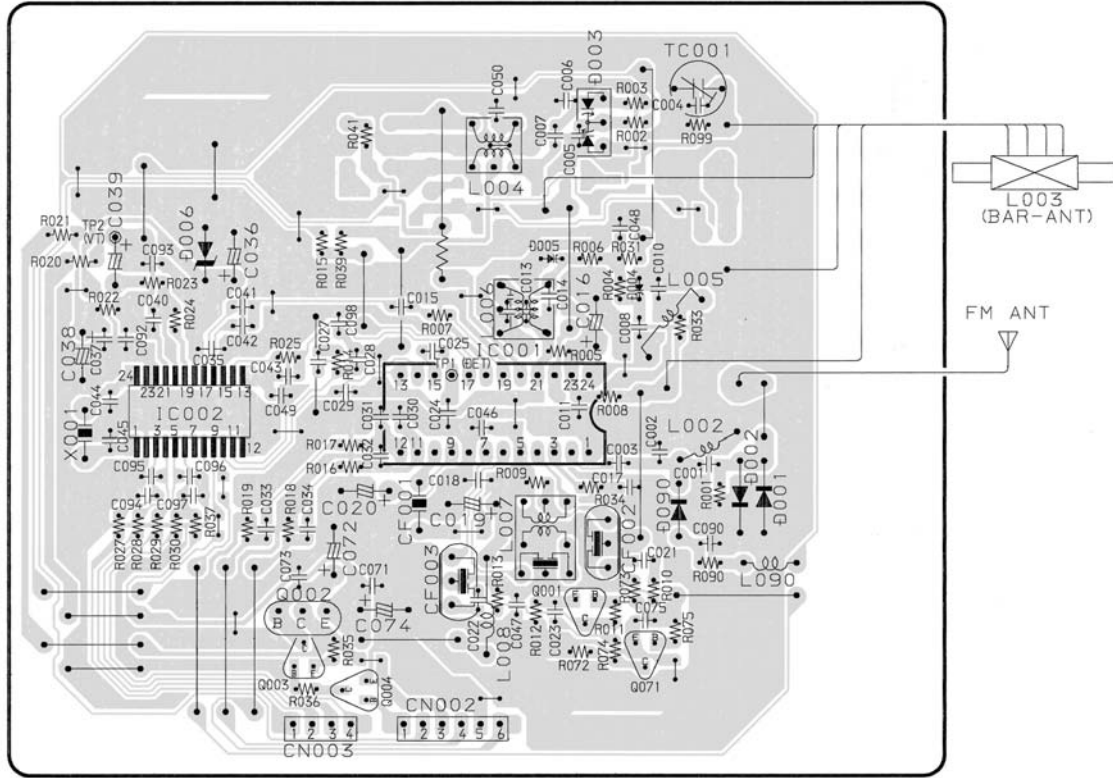




WIRING - 4 (TUNER)

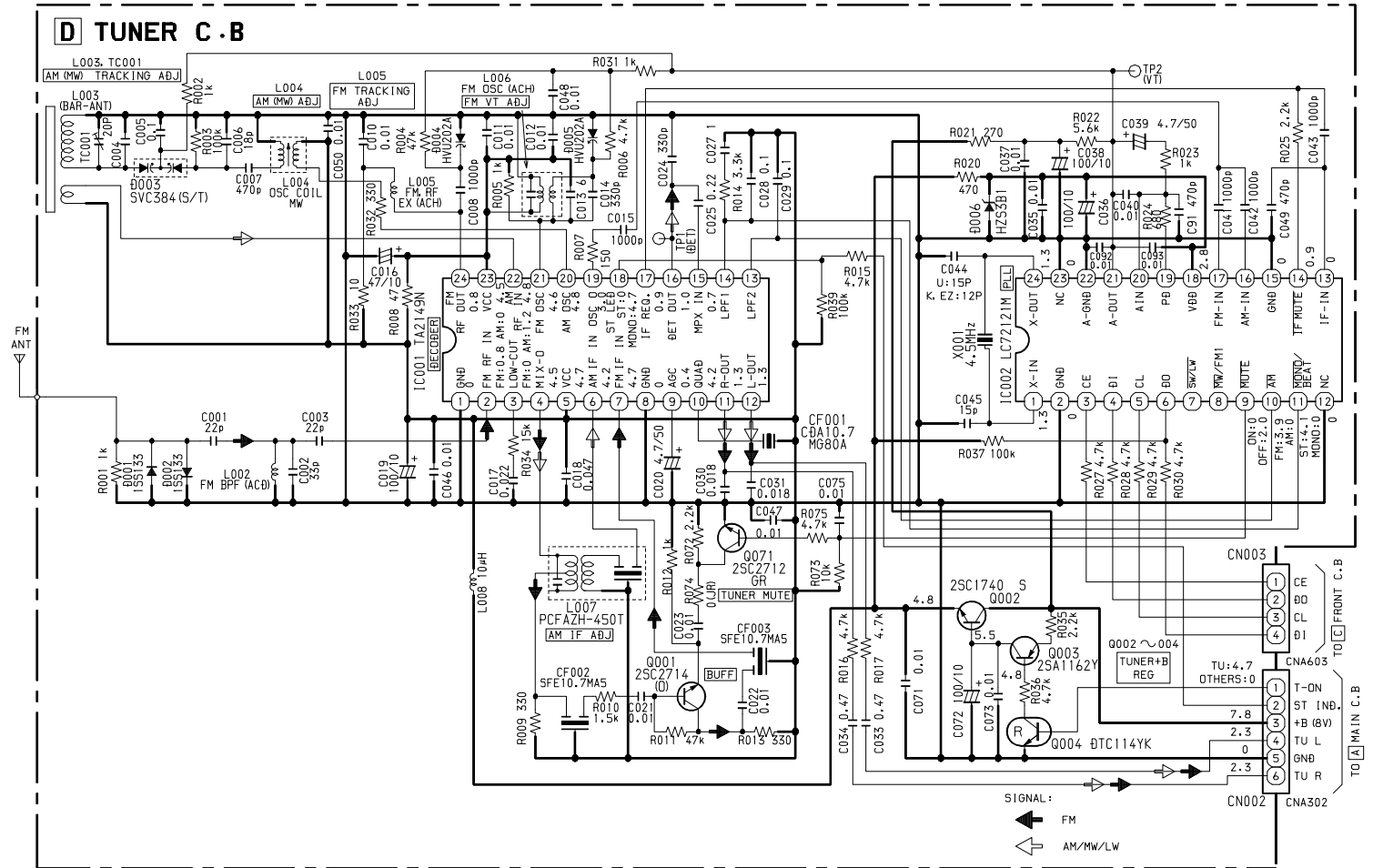
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

⊠ TUNER C. B



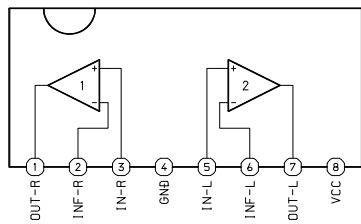
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U

SCHMATIC DIAGRAM - 6 (TUNER)

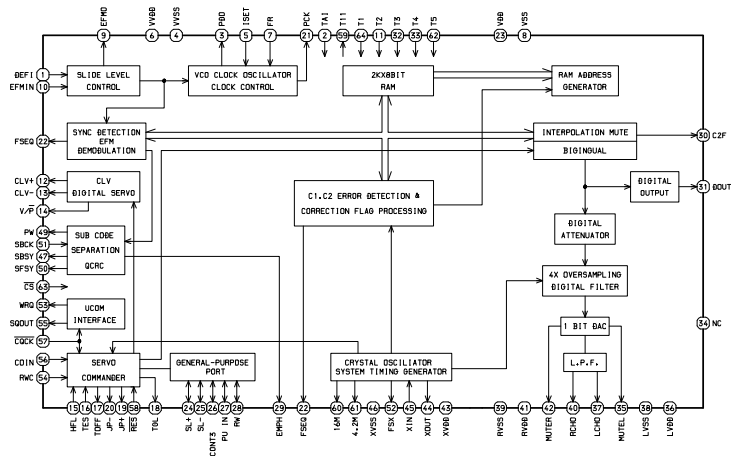


IC BLOCK DIAGRAM

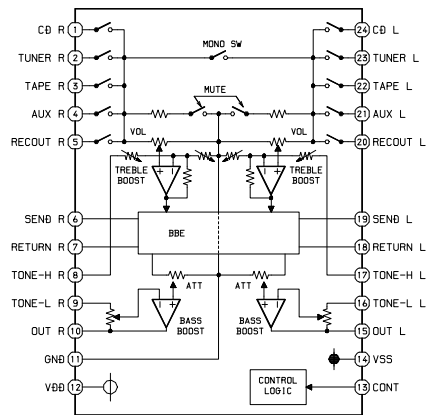
IC,BA4560N



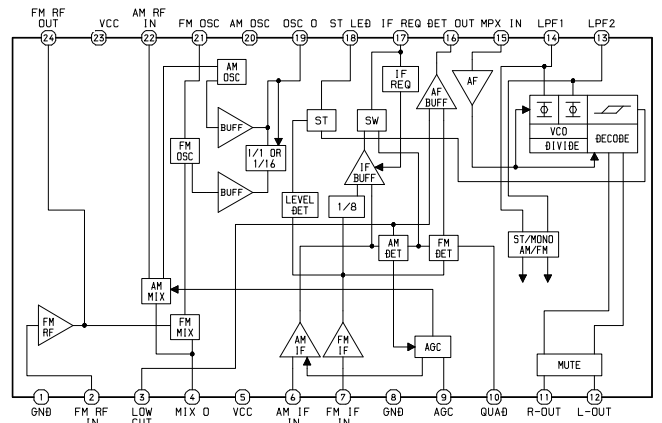
IC,LC78622ED



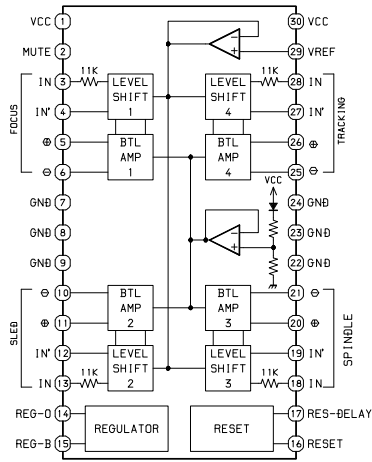
IC,M61509FP



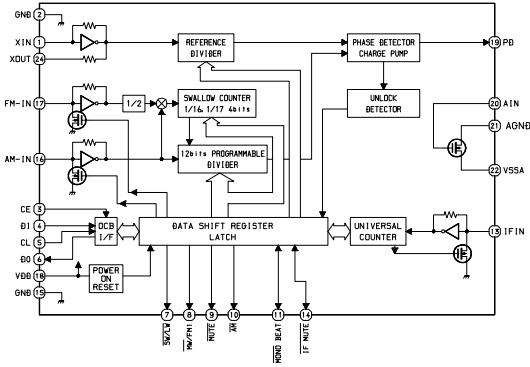
IC,TA2149N



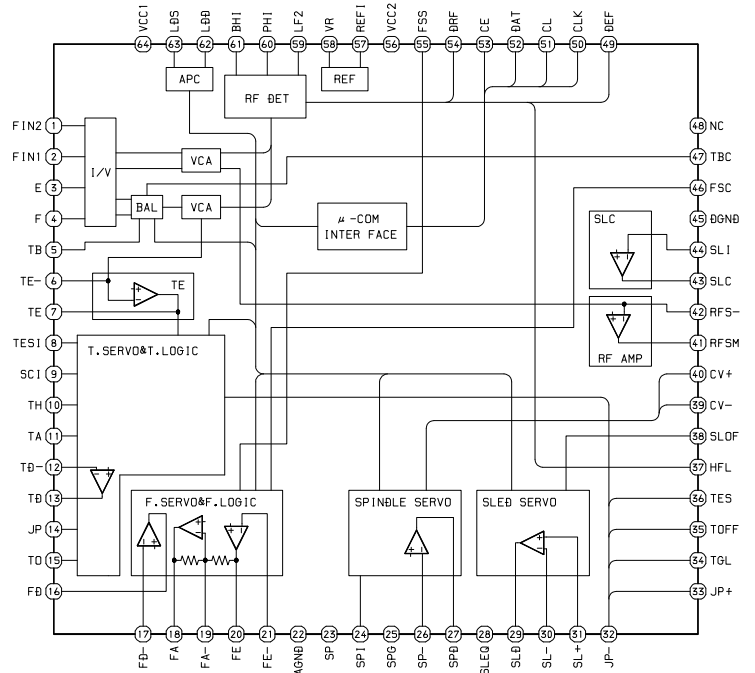
IC,LA6541D



IC,LC72121M



IC,LA9241ML



## IC DESCRIPTION

IC, LC867132V-5G68

Pin No.	Pin Name	I/O	Description
1	O-RMC / CE	O	CD read/write control output and TU CE.
2	O-DATA	O	Data output to M61509FP.
3	O-CLK	O	Output to LC72121M CLK.
4	P16	-	Not used.
5	O-CLKSFT	O	Clock shift output of the microcomputer.
6	I-HOLD	I	Hold status detection.
7	I-RST	I	Microcomputer reset pin.
8	XT1 (IN)	I	Connected to 32.768 kHz crystal oscillator.
9	XT2 (OUT)	O	
10	VSS1	-	Connected to GND.
11	CF1 (IN)	I	Input pin for ceramic resonator oscillation.
12	CF2 (OUT)	O	Output pin for ceramic resonator oscillation.
13	VDD1	-	Power supply.
14	I-FM ST	I	FM STEREO status input.
15	I-KEY0	I	KEY AD input.
16	I-CDSW	I	CD DOOR SW status detection input.
17	I-KEY1	I	KEY AD input.
18	I-MOTOR	I	DECK MECHA MOTOR status input.
19	P85	-	Not used.
20	P86	-	Not used.
21	I-TUDO	I	Data input from LC72121M.
22	O-BASS LED	O	BASS LED ON/OFF control output.
23	O-QS LED	O	Q-Sound LED ON/OFF control output.
24	P92	-	Not used.
25	O-INT	O	INT DIODE MATRIX detection output.
26	I-DRF	I	CD RF level detection input.
27	I-WRQ	I	CD sub-code Q standby input.
28	I-REMO	I	Remote control input.
29	S0 / PA0	O	LCD segment output / Initial settings output (SW) (not used).
30	S1 / PA1	O	LCD segment output / Initial settings output (LW) (not used).
31	S2 / PA2	O	LCD segment output / Initial settings output (MW 10K).
32	S3 / PA3	O	LCD segment output / Initial settings output (FM WIDE) (not used).
33	S4 / PA4	O	LCD segment output / Initial settings output (AMST) (not used).
34	S5 / PA5	O	LCD segment output / Initial settings output (SW2) (not used).
35	S6 / PA6	O	LCD segment output / Initial settings output.
36	S7 / PA7		
37~40	S8~S11	O	LCD segment output.
41	VDD3	-	Power supply.
42	VSS3	-	Connected to GND.
43~50	S12~S19	O	LCD segment output.

Pin No.	Pin Name	I/O	Description
51~54	S20~S23	-	LCD segment output. (not used)
55	O-CD LED	O	LED ON/OFF control output for CD functions.
56	O-TU LED	O	LED ON/OFF control output for TUNER functions.
57	O-TA LED	-	LED ON / OFF control output for TAPE function (not used)
58	O-ROCK LED	O	LED ON/OFF control output for ROCK.
59	O-POP LED	O	LED ON/OFF control output for POP.
60	O-JAZZ LED	O	LED ON/OFF control output for JAZZ.
61	V3	-	Not used.
62	I-CD TEST	-	Not used.
63	I-TU TEST	-	Not used.
64~66	COM0~COM2	O	LCD common output.
67	COM3	-	LCD common output. (not used)
68	VSS2	-	Connected to GND.
69	VDD2	-	Power supply.
70	O-CD ON	O	CD PWR control output.
71	O-TU ON	O	TUNER PWR control output.
72	O-P.CONT	O	Power supply control output.
73	P03	-	Not used.
74	O-MUTE	O	Main mute output.
75	O-FM MONO	-	Not used.
76	O-BEAT CONT	O	BEAT switch over output.
77	O-QSOUND	-	Not used.
78	O-COIN	O	CD command output.
79	I-SQOUT	I	CD sub-code Q input.
80	O-CQCK	O	CLK for CD commands/sub-codes.

IC, LC78622ED

Pin No.	Pin Name	I/O	Description
1	DEFI	I	Defect detection signal (DEF) input.
2	TAI	I	Test input. A pull-down resistor is built in. Must be connected to 0V.
3	PDO	O	External VCO control phase comparator output.
4	VVSS	–	Internal VCO ground. Must be connected to 0V.
5	ISET	O	PDO output current adjustment resistor connection.
6	VVDD	–	Internal VCO power supply.
7	FR	I	VCO frequency range adjustment.
8	VSS	–	Digital system ground. Must be connected to 0V.
9	EFMO	O	Slice level control; EFM signal output.
10	EFMIN	I	Slice level control; EFM signal input.
11	T2	I	Test input. A pull-down resistor is built in. Must be connected to 0V.
12	CLV+	O	Disc motor control output. Three-value output is also possible when specified by microprocessor command.
13	CLV–		
14	V $\bar{P}$	O	Rough servo/phase control automatic switching monitor output. Outputs a high level during rough servo and a low level during phase control.
15	HFL	I	Track detection signal input. This is a Schmitt input.
16	TES	I	Tracking error signal input. This is a Schmitt input.
17	TOFF	O	Tracking off output.
18	TGL	O	Tracking gain switching output. Increase the gain when low.
19	JP+	O	Track jump output. Three-value output is also possible when specified by microprocessor command.
20	JP–		
21	PCK	O	EFM data playback clock monitor. Outputs 4.3218 MHz when the phase is locked. (Not used)
22	FSEQ	O	Synchronization signal detection output. Outputs a high level when the synchronization signal detected from the EFM signal and the internally generated synchronization signal agree. (Not used)
23	VDD	–	Digital system power supply.
24	SL+	O	Serial data command sled signal output terminal from microprocessor.
25	SL–		
26	CONT3	–	Not used.
27	PU IN	I	CD pickup inside limit switch.
28	RW	O	Serial data command sled output terminal from microprocessor.
29	EMPH	O	De-emphasis monitor pin. A high level indicates playback of a de-emphasis disk. (Not used)
30	C2F	O	C2 flag output. (Not used)
31	DOUT	O	Digital output (EIAJ format). (Not used)
32	T3	I	Test input. A pull-down resistor is built in. Must be connected to 0V.
33	T4		
34	NC	–	Unused. Must be left open.
35	MUTEL	O	Left channel one-bit D/A converter mute output. (Not used)
36	LVDD	–	Left channel one-bit D/A converter power supply.
37	LCHO	O	Left channel one-bit D/A converter output.

Pin No.	Pin Name	I/O	Description
38	LVSS	-	Left channel one-bit D/A converter ground. Must be connected to 0V.
39	RVSS	-	Right channel one-bit D/A converter ground. (Must be connected to 0V.)
40	RCHO	O	Right channel one-bit D/A converter output.
41	RVDD	-	Right channel one-bit D/A converter power supply.
42	MUTER	O	Right channel one-bit D/A converter mute output. (Not used)
43	XVDD	-	Crystal oscillator power supply.
44	XOUT	O	Connections for a 16.9344 MHz crystal oscillator element.
45	XIN	I	
46	XVSS	-	Crystal oscillator ground. (Must be connected to 0V.)
47	SBSY	O	Subcode clock synchronization signal output. (Not used)
48	EFLG	O	C1, C2, single and double error correction monitor. (Not used)
49	PW	O	Subcode P, Q, R, S, T, U and W output. (Not used)
50	SFSY	O	Subcode frame synchronization signal output. This signal falls when the subcode are in standby state. (Not used)
51	SBCK	I	Subcode readout clock input. This is a Schmitt input.
52	FSX	O	Output pin for the 7.35 kHz synchronization signal divided from the crystal oscillator. (Not used)
53	WRQ	O	Subcode Q output standby output.
54	RWC	I	Read/write control input. This is a Schmitt input.
55	SQOUT	O	Subcode Q output.
56	COIN	I	Command input pin from control microprocessor.
57	$\overline{\text{CQCK}}$	I	Input for both the command input acquisition clock and the SQOUT pin subcode readout clock input pin. This is Schmitt input.
58	$\overline{\text{RES}}$	I	Reset input. This pin must be set low briefly after power is first applied.
59	T11	O	Test output. Leave open. (Normally output a low level). (Not used)
60	16M	O	16.9344 MHz output. (Not used)
61	4.2M	O	4.2336 MHz output.
62	T5	I	Test input. A pull-down resistor is built-in. (Must be connected to 0V.)
63	$\overline{\text{CS}}$	I	Chip select input. A pull-down resistor is built-in. (Must be connected to 0V if not controlled.)
64	T1	I	Test input. No pull-down resistor. (Must be connected to 0V.)

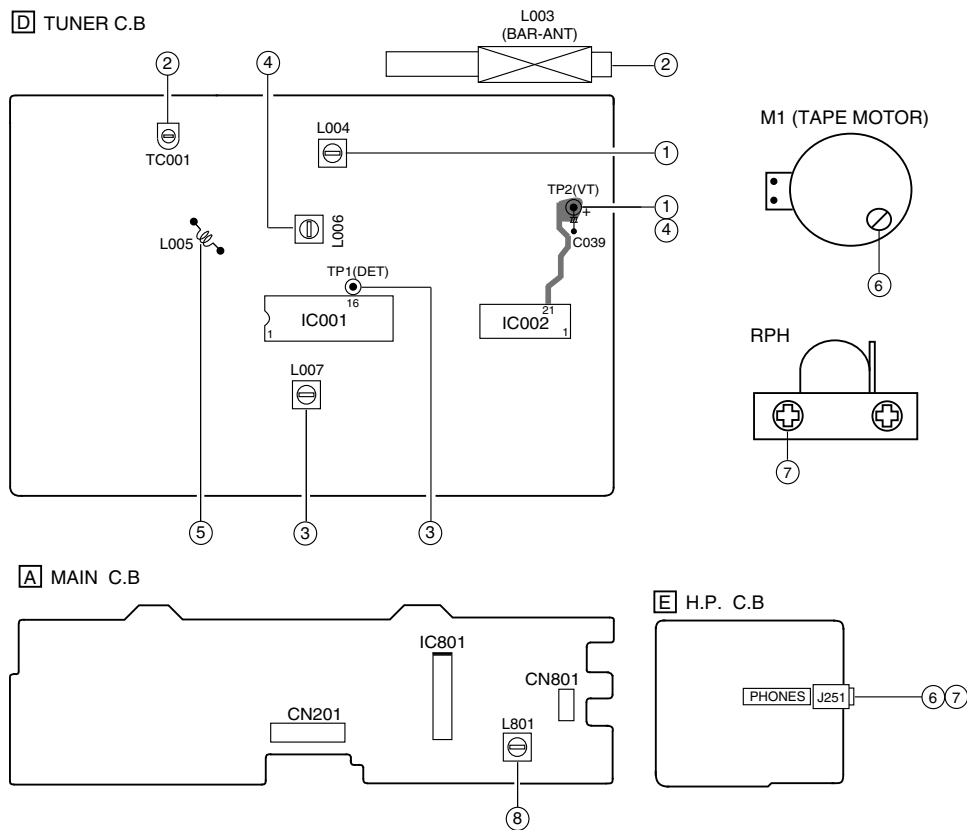


IC, LA9241ML

Pin No.	Pin Name	I/O	Description
1	FIN2	O	For the connection of the pickup photodiode. Addition to the FIN1 pin creates an RF signal and subtraction from it create an EF signal.
2	FIN1	O	For the connection of the pickup photodiode.
3	E	O	For the connection of the pickup photodiode. Subtraction from the F pin creates a TE signal.
4	F	O	For the connection of the pickup photodiode.
5	TB	I	Inputs the DC components in the TE signal.
6	TE-	O	For the connection of a resistor which sets the gain of the TE signal between this pin and the TE pin.
7	TE	O	TE signal output.
8	TESI	I	TES (track error sense) comparator input. The signal is passed through a BPF.
9	SCI	I	Shock detection input.
10	TH	I	Sets the time constant for the tracking gain.
11	TA	O	TA amp output.
12	TD-	I	Composes the tracking phase compensation constant between the TD and VR pins.
13	TD	I	Sets the tracking phase compensation.
14	JP	I	Sets the amplitude of the tracking jump signal (kick pulses).
15	TO	O	Tracking control signal output.
16	FD	O	Focusing control signal output.
17	FD-	I	Composes the focusing phase compensation constant between the FD and FA pins.
18	FA	O	Composes the focusing phase compensation constant between the FD and FA pins.
19	FA-	I	Composes the focusing phase compensation constant between the FD and FA pins.
20	FE	O	FE signal output.
21	FE-	I	For the connection of a resistor which sets the gain of the FE signal between this pin and the TE pin.
22	AGND	O	Ground of analog signals.
23	SP	O	Single-ended output of the signals input to the CV+ and CV- pins.
24	SPI	I	Spindle amp input.
25	SPG	I	For the connection of a resistor which sets the gain in the spindle 12cm mode.
26	SP-	I	For the connection of the spindle phase compensation constant with the SPD pin.
27	SPD	O	Spindle control signal output.
28	SLEQ	I	For the connection of sled phase compensation constant.
29	SLD	O	Sled control signal output.
30	SL-	I	Sled feed signal input from the microprocessor.
31	SL+		
32	JP-	I	Tracking signal input from the DSP.
33	JP+		
34	TGL	I	Tracking gain control signal input from the DSP. Low gain when TGL is "H".
35	TOFF	I	Tracking off control signal input from the DSP. Off when TOFF is "H".
36	TES	O	Outputs the TES signal to the DSP.

Pin No.	Pin Name	I/O	Description
37	HFL	O	The HFL (high frequency level) signal is used to judge whether the main beam is positioned on the pit or on the mirror.
38	SLOF	I	Sled servo off control input.
39	CV-	I	CLV error signal input from the DSP.
40	CV+		
41	RFSM	O	RF output.
42	RFS-	O	Sets the RF gain and the EFM signal's 3T compensation constant together with the RFSM pin.
43	SLC	O	The SLC (slice level control) signal is output to control the DSP's data slice level of the RF waveform.
44	SL1	I	Input to control the DSP's data slice level.
45	DGND	-	Ground of digital signals.
46	FSC	O	Output for the focus search smoothing capacitor.
47	TBC	I	The TBC (tracking balance control) signal sets the EF balance variation range.
48	NC	-	Not connected.
49	DEF	O	Disc defect detection output.
50	CLK	I	Reference clock input. 4.23 MHz is input from the DSP.
51	CL	I	Microprocessor command clock input.
52	DAT	I	Microprocessor command data input.
53	CE	I	Microprocessor chip enable input.
54	DRF	O	DRF (detect RF) is an output to detect the RF level.
55	FSS	I	The FSS (focus search select) signal switches the focus search modes (+/-search / +search with respect to the reference voltage). (Not connected)
56	VCC2	-	VCC of servo and digital circuits.
57	REF1	-	For the connection of bypass capacitor for the reference voltage.
58	VR	O	Reference voltage output.
59	LF2	-	Sets the time constant for disc defect detection.
60	PH1	-	For the connection of a capacitor to hold the RF signal peak.
61	BH1	-	For the connection of a capacitor to hold the RF signal bottom.
62	LDD	O	APC circuit output.
63	LDS	I	APC circuit input.
64	VCC1	-	VCC of RF signal circuits.

## ADJUSTMENT <TUNER / DECK>



### < TUNER SECTION >

1. AM(MW) VT Adjustment  
 Settings : • Test point : TP2(VT)  
 • Adjustment location : L004  
 Method : Set to AM 1000 kHz <U>, MW 999 kHz <K,EZ> and adjust L004 so that the test point voltage becomes  $3.75 \text{ V} \pm 0.02 \text{ V}$ . Then set to AM 530 kHz <U>, MW 531 kHz <K,EZ> and check that the test point voltage is between  $1.0 \text{ V} \sim 1.4 \text{ V}$ .
2. AM(MW) Tracking Adjustment  
 L003.....600 kHz<U>  
 L003.....603 kHz<K,EZ>  
 TC001.....1400 kHz<U>  
 TC001.....1404 kHz<K,EZ>
3. LW Tracking Adjustment<K,EZ>  
 L003.....153 kHz  
 TC001.....288 kHz
4. AM IF Adjustment<U>  
 Settings : • Test point : TP1(DET)  
 • Adjustment location : L007  
 Method : Adjust L007 so that the output level at 1400 kHz becomes maximum.
5. AM IF Adjustment<K,EZ>  
 Settings : • Test point : TP1(DET)  
 • Adjustment location : L007  
 Method : Adjust L007 so that the output level at 1404 kHz becomes maximum.

6. FM VT Adjustment  
 Settings : • Test point : TP2(VT)  
 • Adjustment location : L006  
 Method : Set to FM 108.0 MHz and adjust L006 so that the test point voltage becomes  $6.0 \text{ V} \pm 0.2 \text{ V}$
7. FM Tracking Adjustment  
 L005.....98.0 MHz

### < DECK SECTION >

8. Tape Speed Adjustment  
 Settings : • Test tape : TTA - 100  
 • Test point : J251 (PHONES jack)  
 • Adjustment location : SFR on Tape Motor  
 Method : Play back the test tape and adjust SFR so that the frequency counter reads  $3000 \text{ Hz} \pm 30 \text{ Hz}$ .
9. Head Azimuth Adjustment  
 Settings : • Test tape : TTA - 320  
 • Test point : J251 (PHONES jack)  
 • Adjustment location : Azimuth adjustment screw  
 Method : Play back the 8 kHz signal of the test tape and adjust screw so that the output becomes maximum.
10. Bias frequency Adjustment  
 L801.....85 kHz  $\pm 0.5 \text{ kHz}$



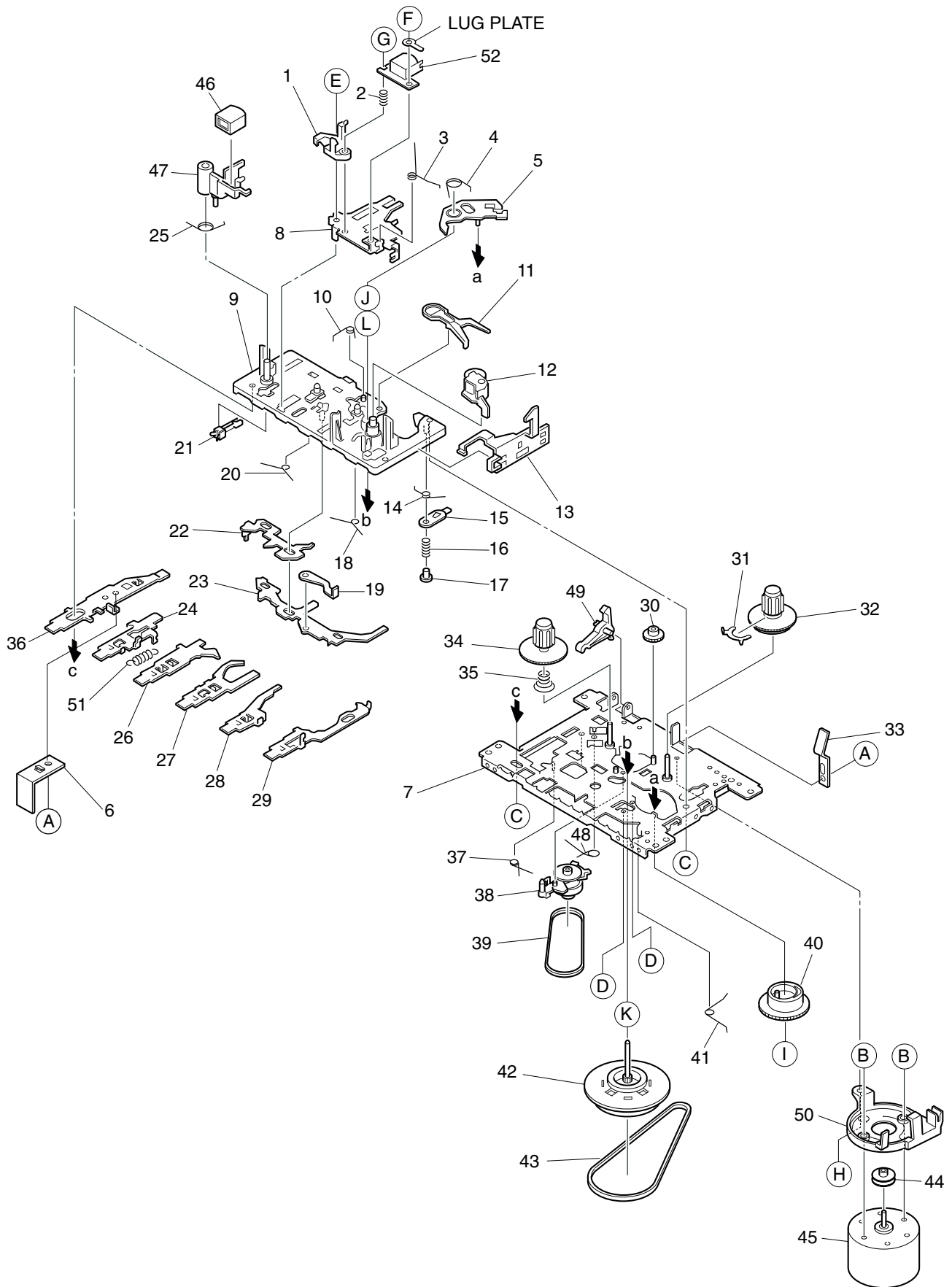
# MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-CHE-008-010		WINDOW, CASS E	38	87-036-389-010		SW, PUSH LOCK
2	8A-CH4-205-010		SPR-T, CASS	39	8A-CHE-003-010		CHAS, CD 6K E
3	8A-CH4-007-010		BOX, CASS	40	8A-CH4-206-010		HLDR, OIL-DMPR
4	8A-CH4-118-010		WINDOW, LCD U<U>	41	8A-CHE-026-010		BTN, VOL E
4	8A-CH4-010-010		WINDOW, LCD<K, EZ>	42	8A-CHE-018-010		HANDL, GRIP E
5	87-B00-010-010		BADGE, AIWA 30.5-5.2 S 2.5L	43	8A-CHE-019-010		COVER, HANDL E
6	8A-CHE-009-010		PANEL, LCD E	44	87-A90-086-010		COVER, AC-SOCKET
7	86-CT4-218-010		CUSHION, FOOT/PORON	45	87-A60-177-010		JACK, AC U W/SW<U>
8	8A-CH4-001-010		CABI, FR	45	87-A60-178-010		JACK, AC E BLK W/SW<K, EZ>
9	8A-CH4-015-010		GRILLE, FR R	46	8A-CH4-002-010		CABI, REAR
10	8A-CH4-014-010		GRILLE, FR L	47	8Z-CH4-640-010		ANT, ROD
11	8A-CH4-682-010		SPKR, 10- 7OHM<U>	48	87-CD6-041-010		PLATE, AC
11	8A-CH4-681-010		SPKR, 10- 3.2OHM<K, EZ>	49	8A-CH4-011-010		LID, BATT
12	8Z-CH4-204-010		HLDR, SPEAKER	50	87-CD6-213-010		SPR-C, BATT (-)
13	8Z-CH4-645-010		SPKR, MAYLOR 8OHM SILVER	51	8A-CH4-210-010		HLDR, ANT
14	8A-CH4-013-010		PANEL, TW R	52	8A-CD9-606-010		PT, U 2.5W<U>
15	84-CD5-215-010		GEAR	52	8A-CD9-667-010		PT, E<K, EZ>
16	84-CD5-216-010		BRACKET	53	8A-CH4-211-010		COVER, HLDR PT
17	8A-CH4-012-010		PANEL, TW L	54	8A-CH4-209-010		HLDR, PT
18	8A-CH4-030-010		CAP, STOP	55	8A-CHE-020-010		KEY, CASS 6K E
19	8A-CH4-029-010		CAP, PLAY	56	8A-CH4-203-010		HLDR, TU
20	8A-CH4-022-010		BTN, PLAY	57	8A-CH4-207-010		SPR-P, REC 6K
21	8A-CH4-027-010		BTN, BASS	58	8A-CH4-017-010		GRILLE, TW R
22	8A-CH4-024-010		BTN, EQ	59	8A-CH4-016-010		GRILLE, TW L
23	8A-CH4-028-010		BTN, SOUND	60	88-CH6-019-010		PANEL, CD
24	8A-CH4-201-010		HLDR, LCD	61	8A-CD9-620-010		FF-CABLE, 16P FR-MAIN
25	8A-CH4-034-010		LENS, FUNC	62	8A-CD9-621-010		FF-CABLE, 16P CD-RF
26	8A-CH4-025-010		BTN, FUNC	63	8A-CD9-622-010		FF-CABLE, 8P CD-FR
27	8A-CH4-033-010		CAP, REPEAT	A	87-741-096-410		UT2+3-10
28	8A-CH4-032-010		CAP, REW	B	87-342-074-010		UT2+2.6-8
29	8A-CH4-031-010		CAP, FF	C	87-741-100-410		UT2+3-16(W/O) SLOT
30	8A-CH4-023-010		BTN, SKIP	D	87-661-100-410		VFT1+3-16
31	8Z-CH4-212-010		RING, CHUCK	E	87-067-566-010		TAPPING SCREW, VFTT+3-6
32	8Z-CH4-211-010		BASE, CHUCK	F	87-741-095-410		UT2+3-8 GLD
33	87-036-368-010		MAGNET	G	87-571-032-410		VIT+2-3
34	84-CD5-217-010		PLATE, MAGNET	H	87-B10-239-010		QT2+3-8 W/O CR
35	85-CD7-217-010		HLDR, CHUCK A	I	87-751-075-410		VT2+2.6-10
36	8A-CH4-121-010		BOX, CD U<U>				
36	8A-CH4-005-010		BOX, CD U<K, EZ>				
37	8A-CH4-204-010		SPR-T, CD				

## 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.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	S1-921-030-4A0		HEAD BASE	36	S1-921-140-030		REC BUTTON LEVER
2	S1-821-030-070		AZIMUTH SPRING	37	S1-921-140-170		P.S.LEVER SPRING
3	S1-921-030-090		PANEL P SPRING	38	S1-921-073-040		RF CLUTCH ASSY
4	S1-921-260-050		GEAR PLATE SPRING	39	S1-921-070-030		RF BELT
5	S1-921-265-020		GEAR PLATE ASSY	40	S1-921-260-020		CAM GEAR
6	S1-510-020-020		REC SPRING PLATE	41	S1-921-140-160		E ACTUATOR SPRING
7	S1-921-015-010		CHASSIS ASSY	42	S1-921-093-210		FLYWHEEL ASSY
8	S1-921-030-110		HEAD PANEL	43	S1-921-090-380		MAIN BELT
9	S1-921-143-160		BASE ASSY	44	S1-921-120-590		MOTOR PULLEY
10	S1-921-141-8A0		M CONTROL SPRING	45	S6-002-030-220		MOTOR EG530AD-2B
11	S1-921-260-4A0		SENSING LEVER	46	S6-209-100-100		E HEAD PH-K380-MS1
12	S1-921-043-100		PINCH ROLLER ARM ASSY	47	S1-921-030-050		MG ARM
13	S1-921-130-010		EJECT SLIDE LEVER	48	S1-921-140-210		REC BUTTON LEVER SPRING
14	S1-921-141-3A0		P CONTROL SPRING	49	S1-821-100-690		RECORD SAFETY LEVER
15	S1-921-140-550		PAUSE LEVER(E)	50	S1-821-128-9A0		MOTOR BRACKET
16	S1-921-140-120		PAUSE LEVER SPRING	51	S1-821-010-500		PLAY BUTTON LEVER SPRING
17	S1-921-140-110		PAUSE STOPPER	52	S6-201-011-110		HEAD,RP7442ES-0951
18	S1-921-140-150		BUTTON LEVER SPRING(B)	A	S9-P04-200-310		C TAPPING SCREW 2-3
19	S1-821-011-590		E KICK LEVER	B	S1-921-120-020		MOTOR COLLER SCREW
20	S1-921-141-070		BUTTON LEVER SPRING(A)	C	S9-B10-200-510		P TAPPING BIND SCREW M2-5
21	S6-401-011-490		LEAF SW MSW-1541T	D	S9-C07-204-510		SCREW, TAPPING (CAMERA) M2-4.5
22	S1-921-140-090		SWITCH ACTUATOR	E	S9-P01-200-610		SCREW, M2-6
23	S1-921-140-080		PUSH BUTTON ACTUATOR	F	S9-B01-200-310		(+) BIND SCREW M2-3
24	S1-921-140-190		PLAY BUTTON LEVER	G	S9-F08-200-710		AZIMUTH SCREW M2-7
25	S1-921-030-100		MG ARM SPRING	H	S1-921-120-030		MB SCREW
26	S1-921-140-040		REW BUTTON LEVER	I	S9-W02-300-100		P WASHER CUT 1.2-3.8-0.3
27	S1-921-140-050		FF,BUTTON REVER	J	S9-W02-500-100		P WASHER CUT 1.45-3.8-0.5
28	S1-921-140-060		STOP BUTTON LEVER	K	S9-W01-400-100		P WASHER 2-3.5-0.4
29	S1-921-140-600		PAUSE BUTTON LEVER	L	S9-W01-130-200		P WASHER 2.1-4-0.13
30	S1-821-100-700		FF GEAR				
31	S1-921-050-060		SENER				
32	S1-921-053-100		TAKE UP REEL ASSY				
33	S1-829-100-010		PACK SPRING				
34	S1-921-050-150		S REEL HUB				
35	S1-921-050-220		BACK TENSION SPRING				

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