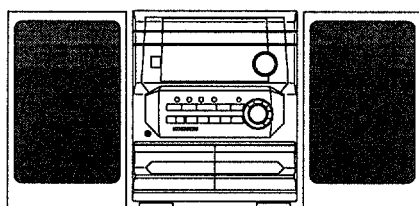


aiwa



NSX-A222 NSX-A223 NSX-S222 NSX-S333



COMPACT DISC /
STEREO CASSETTE RECEIVER

- BASIC TAPE MECHANISM : 6ZM-3 PR1NM
- BASIC CD MECHANISM : 4ZG-1 Z3RDL5HM

- TYPE : U<A222/223>
LH<S222/333>

REVISION PUBLISHING

SYSTEM	SPEAKER	CD - CASSEIVER	REMOTE CONTROLLER
NSX - A222 (TYPE : U)	SX - NA332	CX - NA222	RC UNIT ZAS02
NSX - A223 (TYPE : U)	SX - NA335 SX - R275		
NSX - S222 (TYPE : LH)	SX - NS332	CX - NS222	
NSX - S333 (TYPE : LH)	SX - NS552	CX - NS333	

- This Service Manual is the "Revision Publishing" and replaces Simple Manual of NSX-A222/A223/S222/S333, S/M Code No. 09-98C-312-6T1.
- If requiring information about the CD mechanism, see Service Manual of 4ZG-1, S/M Code No. 09-983-249-3S2.

SPECIFICATIONS

<FM Tuner section>

Tuning range 87.5 MHz to 108 MHz
Usable sensitivity (IHF) 13.2 dBf
Antenna terminals 75 ohms (unbalanced)

<AM Tuner section>

Tuning range 530 kHz to 1710 kHz (10 kHz step)
 531 kHz to 1602 kHz (9 kHz step)
Usable sensitivity 350 μ V/m
Antenna Loop antenna

<Amplifier section>

Power output 222U, 223U :
 30 W + 30 W (50 Hz – 20 kHz, THD less than 1%, 6 ohms)
 40 W + 40 W (1 kHz, T.H.D. less than 10%, 6 ohms)
 222LH:
 Rated : 24 W + 24 W (6 ohms, T.H.D. 1 %, 1 kHz)
 Reference: 30W + 30W (6 ohms, T.H.D. 10 %, 1 kHz)
 333LH :
 Rated : 40 W + 40 W (6 ohms, T.H.D. 1 %, 1 kHz)
 Reference: 50W + 50W (6 ohms, T.H.D. 10 %, 1 kHz)

Total harmonic distortion 222U, 223U & 222LH:
 0.05 % (15 W, 1 kHz, 6 ohms, DIN AUDIO)
 333LH:
 0.05 % (25W, 1 kHz, 6 ohms, DIN AUDIO)

Inputs

Outputs

VIDEO/AUX : 500 mV
SPEAKERS:
 accept speakers of 6 ohms or more
SURROUND SPEAKERS (U only):
 accept speakers of 8 ohms to 16 ohms
PHONES (stereo jack) :
 accepts headphones of 32 ohms or more

<Cassette deck section>

Track format 4 tracks, 2 channels stereo
Frequency response 50 Hz - 10000 Hz
Recording system AC bias
Heads Deck 1 : Playback head x 1
 Deck 2 : Recording/playback/erase head x 1

<Compact disc player section>

Laser Semiconductor laser ($\lambda = 780$ nm)
D-A converter 1 bit dual
Signal-to-noise ratio 85 dB (1 kHz, 0 dB)
Harmonic distortion 0.05% (1 kHz, 0 dB)
Wow and flutter Unmeasurable

<Speaker system SX-NA332, SX-NS332>

Cabinet type 2 way, bass reflex (magnetic shielded type)
Speakers Woofer :
 120 mm ($4\frac{3}{4}$ in.) cone type
 Tweeter :
 20 mm ($1\frac{3}{16}$ in.) ceramic type
Impedance 6 ohms
Output sound pressure level 87 dB/W/m
Dimensions (W x H x D) 235 x 324 x 270 mm
 ($9\frac{3}{8}$ x $12\frac{7}{8}$ x $10\frac{3}{4}$ in.)
Weight 2.8 kg (6 lbs 30 oz.) <SX-NA332>
 2.5 kg <SX-NS332>

<Speaker system SX-NA335>

Cabinet type 2 way, bass reflex (magnetic shielded type)
Speakers Woofer :
 120 mm ($4\frac{3}{4}$ in.) cone type
 Tweeter :
 10 mm ($1\frac{3}{32}$ in.) ceramic type
Impedance 6 ohms
Output sound pressure level 87 dB/W/m
Dimensions (W x H x D) 235 x 324 x 250 mm
 ($9\frac{3}{8}$ x $12\frac{7}{8}$ x $9\frac{7}{8}$ in.)
Weight 2.8 kg (6 lbs 30 oz.)

<Speaker system SX-NS552>

Cabinet type 3 way, bass reflex (magnetic shielded type)
Speakers Woofer : 160 mm cone type
 Tweeter : 50 mm ceramic type
 Super tweeter :
 20 mm ceramic type
Impedance 6 ohms
Output sound pressure level 87 dB/W/m
Dimensions (W x H x D) 234 x 324 x 270 mm
Weight 3.8 kg

<General>

Power requirements 222U, 223U :
 120 V AC, 60Hz
 222LH & 333LH:
 120 V/ 220 – 230 V/ 240 V AC, switchable, 50 / 60 Hz
Power consumption 222U, 223U : 90 W
 222LH : 80W
 333LH: 100 W
Dimensions of main unit (W x H x D) 260 x 330 x 350 mm
 ($10\frac{1}{4}$ x 13 x $13\frac{7}{8}$ in.)
Weight of main unit 222U, 223U : 5.9 kg (13 lbs)
 222LH : 5.9 kg
 333LH : 6.5 kg

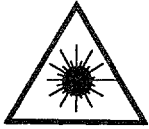
• Design and specifications are subject to change without notice.

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-

CAUTION

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

ATTENTION

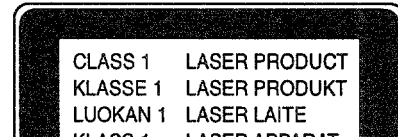
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

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.



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.

Precaution to replace Optical block

NOTE ON BEFORE STARTING REPAIR

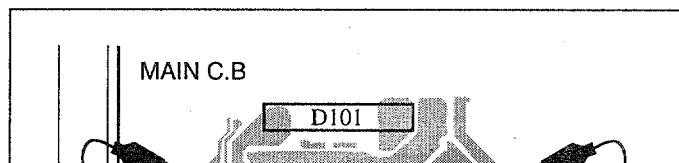
1. Forced discharge of electrolytic capacitor of power supply block

When repair is going to be attempted in the set that uses relay circuit in the power supply block, electric potential is kept charged across the electrolytic capacitors (C101, 102) even though AC power cord is removed. If repair is attempted in this condition, the secondary defect can occur.

In order to prevent secondary trouble, perform the following measures before starting repair work.

Discharge procedure

- ① Remove the AC power cord.
- ② Connect a discharging resistor at an end of lead wire that has clips at both ends. Connect the other end of the lead



In such a case, check also if the POWER AMPLIFIER circuit or power supply circuit has any abnormalities or not.

2-2. Regarding reset

There are cases that the machine does not work correctly because the MICROCOMPUTER is not reset even though the AC power cord is re-inserted, or the software reset (pressing the STOP key + POWER key) is performed.

When the above described phenomenon occurs, it can lead to wrong judgement as if the MICROCOMPUTER is defective and to exchange the MICROCOMPUTER. In such a case, perform the forced-reset by the following procedure and check good or no good of the MICROCOMPUTER.

- ① Remove the AC power cord.

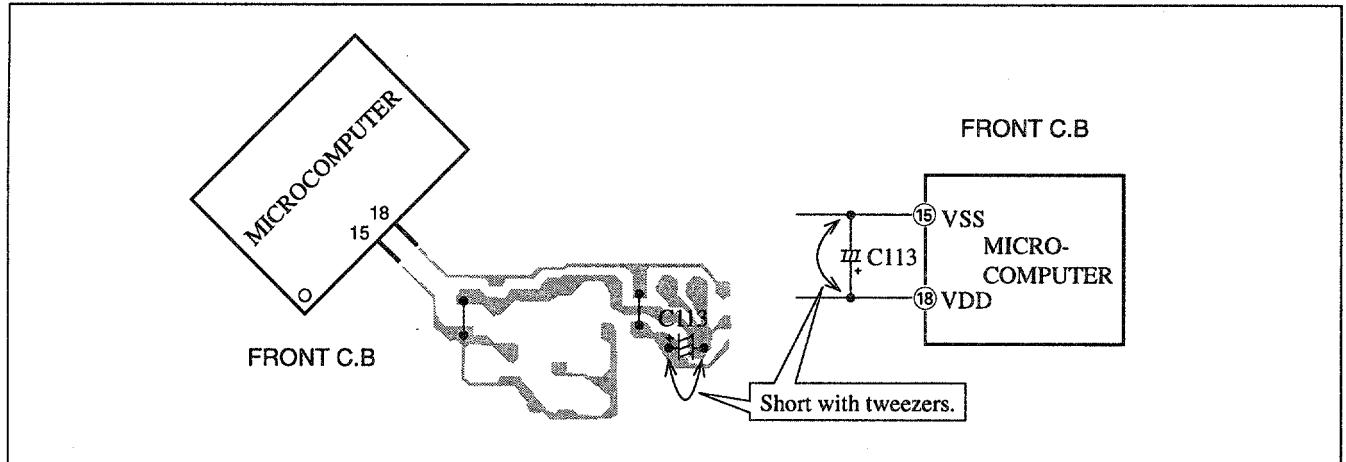


Fig-2-2

- ② Short both ends of the electrolytic capacitor C113 that is connected to VDD of the MICROCOMPUTER with tweezers.
- ③ Connect the AC power cord again. If the MICROCOMPUTER returns to the normal operation, the MICROCOMPUTER is good.

Note: The reference number or MICROCOMPUTER pin number of transistor (Q110) and electrolytic capacitor (C113) can change depending on the models. Be sure to check the reference numbers on schematic diagram before starting the discharging work.

2-3. Confirmation of soldering state of MICROCOMPUTER

Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

DIODE

[illegible]

CON301	87-099-827-010	CONN, 3P S2M-SW<3LH>	C701	87-018-115-080	CAR, CER 47P-30V
CON351	87-099-832-010	CONN, 8P S2M-8W<3LH>	CN701	87-099-013-010	CONN, 11P 6216 V
FB602	87-008-372-080	RTIMER, FMI PL QTPN1<U>			

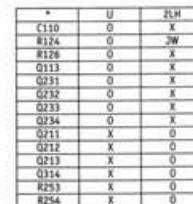
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S305	87-A90-164-080	SW, TACT	SKQNA(N)
S306	87-A90-164-080	SW, TACT	SKQNA(N)
S307	87-A90-164-080	SW, TACT	SKQNA(N)
S308	87-A90-164-080	SW, TACT	SKQNA(N)
S309	87-A90-164-080	SW, TACT	SKQNA(N)
S310	87-A90-164-080	SW, TACT	SKQNA(N)
S312	87-A90-164-080	SW, TACT	SKQNA(N)
S314	87-A90-164-080	SW, TACT	SKQNA(N)
S316	87-A90-164-080	SW, TACT	SKQNA(N)
S317	87-A90-164-080	SW, TACT	SKQNA(N)
S318	87-A90-164-080	SW, TACT	SKQNA(N)
S319	87-A90-164-080	SW, TACT	SKQNA(N)
S320	87-A90-164-080	SW, TACT	SKQNA(N)
S321	87-A90-164-080	SW, TACT	SKQNA(N)
S322	87-A90-164-080	SW, TACT	SKQNA(N)
S323	87-A90-164-080	SW, TACT	SKQNA(N)
S324	87-A90-164-080	SW, TACT	SKQNA(N)
S325	87-A90-164-080	SW, TACT	SKQNA(N)
S329	87-A90-164-080	SW, TACT	SKQNA(N)
AC1 C.B.			
△ F101	87-035-224-010	FUSE, 1.6A 250V T 218<2LH>	
△ F101	87-035-139-010	FUSE, 2.5A 250V T 218<3LH>	
△ F101	87-035-485-010	FUSE, 2A 125V T 237<U>	
△ FC1	87-033-213-080	CLAMP, FUSE<U>	
△ FC2	87-033-213-080	CLAMP, FUSE<U>	
△ FC101	87-033-147-010	FUSE CLAMP<2LH, 3LH>	
△ FC102	87-033-147-010	FUSE CLAMP<2LH, 3LH>	
△ PT101	88-NF8-605-010	PT, 8NF-8LH<3LH>	
△ PT101	88-NF9-611-010	PT, 8NF-9 H1-LH<2LH>	
△ PT101	82-NF9-620-010	PT, ZNF-9 U<U>	
△ SW101	87-A90-165-010	SW, SL 1-2-3 SWS2301<2LH, 3LH>	
△ T1	87-A60-317-010	TERMINAL, 1P MSC<U>	
△ T2	87-A60-317-010	TERMINAL, 1P MSC<U>	
△ T101	87-A60-317-010	TERMINAL, 1P MSC<2LH, 3LH>	
△ T102	87-A60-317-010	TERMINAL, 1P MSC<2LH, 3LH>	

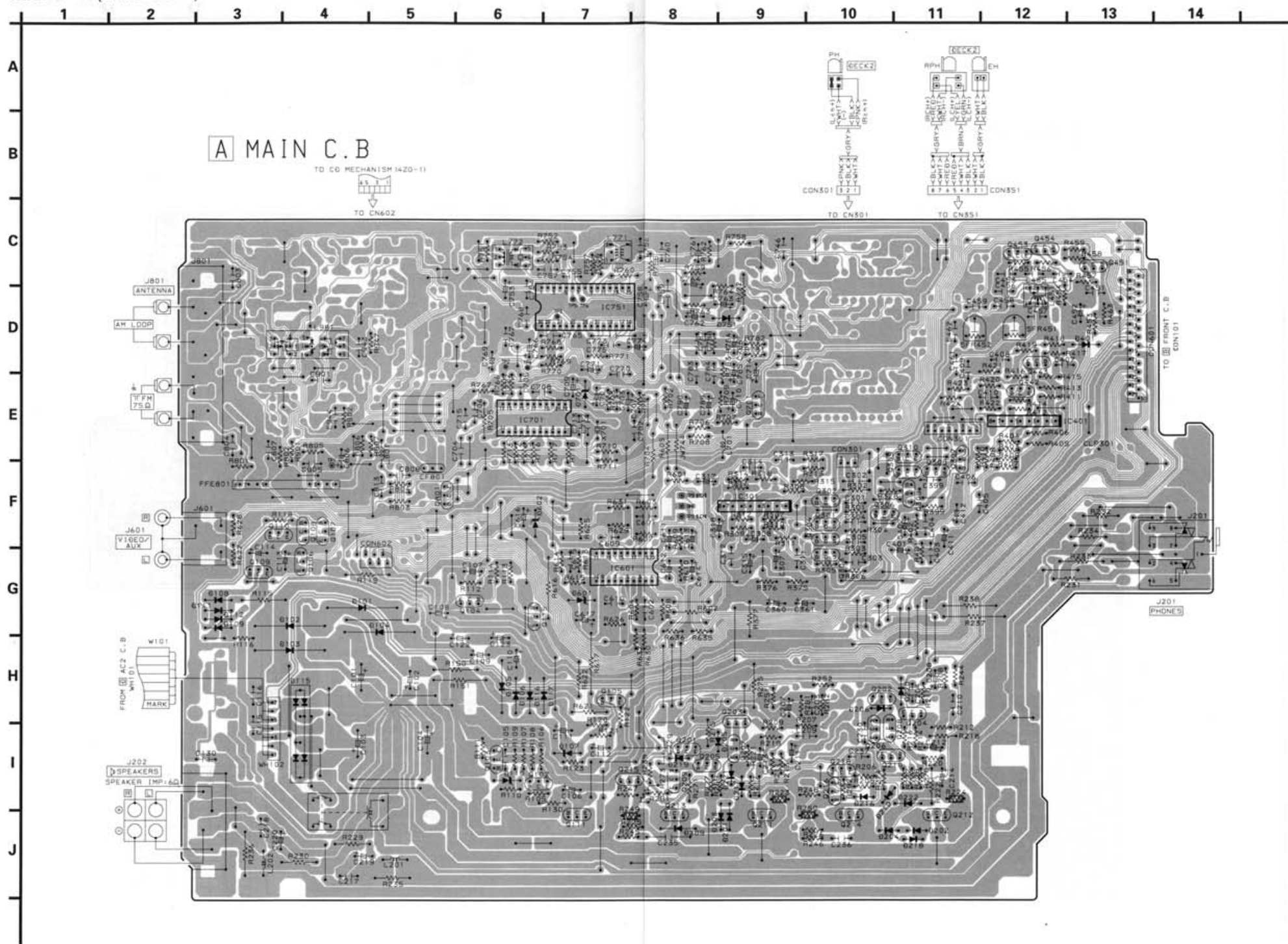
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
AC2 C.B.			
△ PR4	87-026-681-080	PROTECTOR, 5A 60V 491<3LH>	
△ PR5	87-026-681-080	PROTECTOR, 5A 60V 491<3LH>	
△ PR101	87-026-681-080	PROTECTOR, 5A 60V 491<2LH>	
△ PR102	87-026-681-080	PROTECTOR, 5A 60V 491<2LH>	
R1	87-A00-261-080	RES, M/F 0.56-1W J<3LH>	
R2	87-A00-261-080	RES, M/F 0.56-1W J<3LH>	
WH101	87-A90-459-010	HLDR, WIRE 2.5-5P<2LH, U>	
WH101	87-A90-460-010	HLDR, WIRE 2.5-7P<3LH>	
DECK C.B.			
CN105	87-099-753-019	CONN, 11P 9604	
CN301	86-ZM3-604-219	CON ASSY, 3P-PB	
CN351	86-ZM3-605-119	CON ASSY, 8P-PB	
SFR1	87-024-581-019	SFR, 3.3K DIA 6H	
SOL1	82-ZM1-618-410	SOL ASSY, 27	
SOL2	82-ZM1-618-410	SOL ASSY, 27	
SW1	87-A90-248-019	SW, MICRO ESE11SH2CXQ	
SW2	87-A90-248-019	SW, MICRO ESE11SH2CXQ	
SW3	87-A90-248-019	SW, MICRO ESE11SH2CXQ	
SW4	87-A90-248-019	SW, MICRO ESE11SH2CXQ	
SW5	87-A90-248-019	SW, MICRO ESE11SH2CXQ	
W1	82-ZM1-632-019	REN-CORD, 4P-120MM	

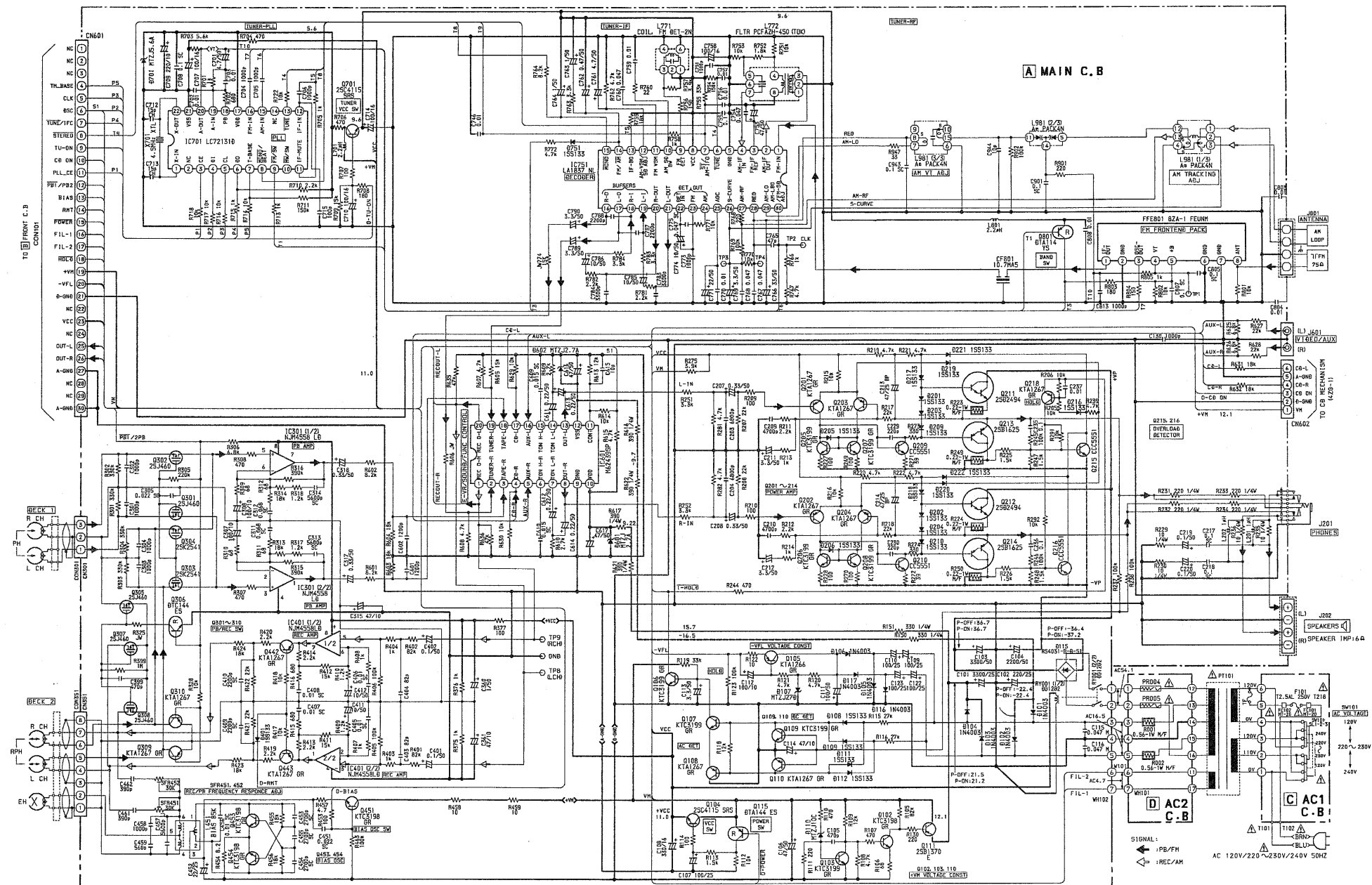


TO CD MECHANISM (420-1)

TD CN602











B FRONT C. B

TO CG MECHANISM
(4ZG-1)

5201
VOLUME

FCC 1							
1	3	5	7	9	11	13	

S314
T-BASS

FL301
(DISPLAY)

5329
[C6]S302
VIDEO/A

S304 1C202
TUNER/BAND (REMOTE SENSOR)

5303
PE DECK 1/2

S301
POWER
STANDBY/ON

TO [E] DECK C.B.
CN105

FCC2
11
9
7
5
3
1

FROM ☒ MAIN C.B
CN601

☐ **MU**

GRAPHIC EQUALIZER

S320
CLASSIC

S318
POP

S316
ROCK

S322
TIMER

S324
ENTER/
DIMMER

LE0605,
S312

▶▶ / ▶▶ UP

LED604.
S310



DISC DIRECT PLAY

S321
DISC 3

S319
DISC 2

S317
ISC 1

LED 602
S306

■ CLEAR

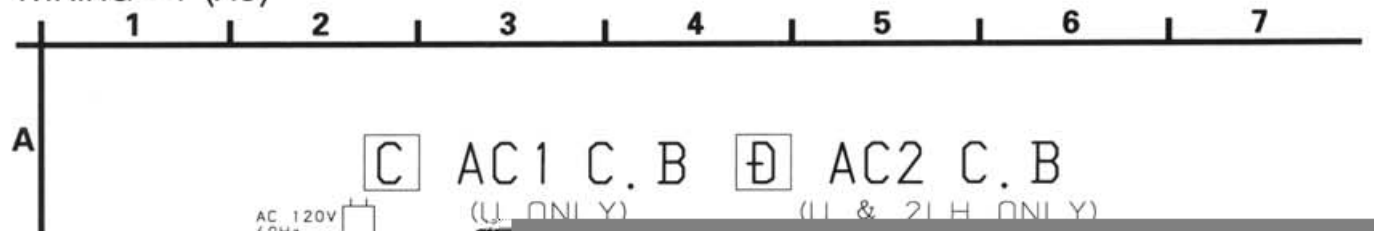
LED 601
S305

11 SET

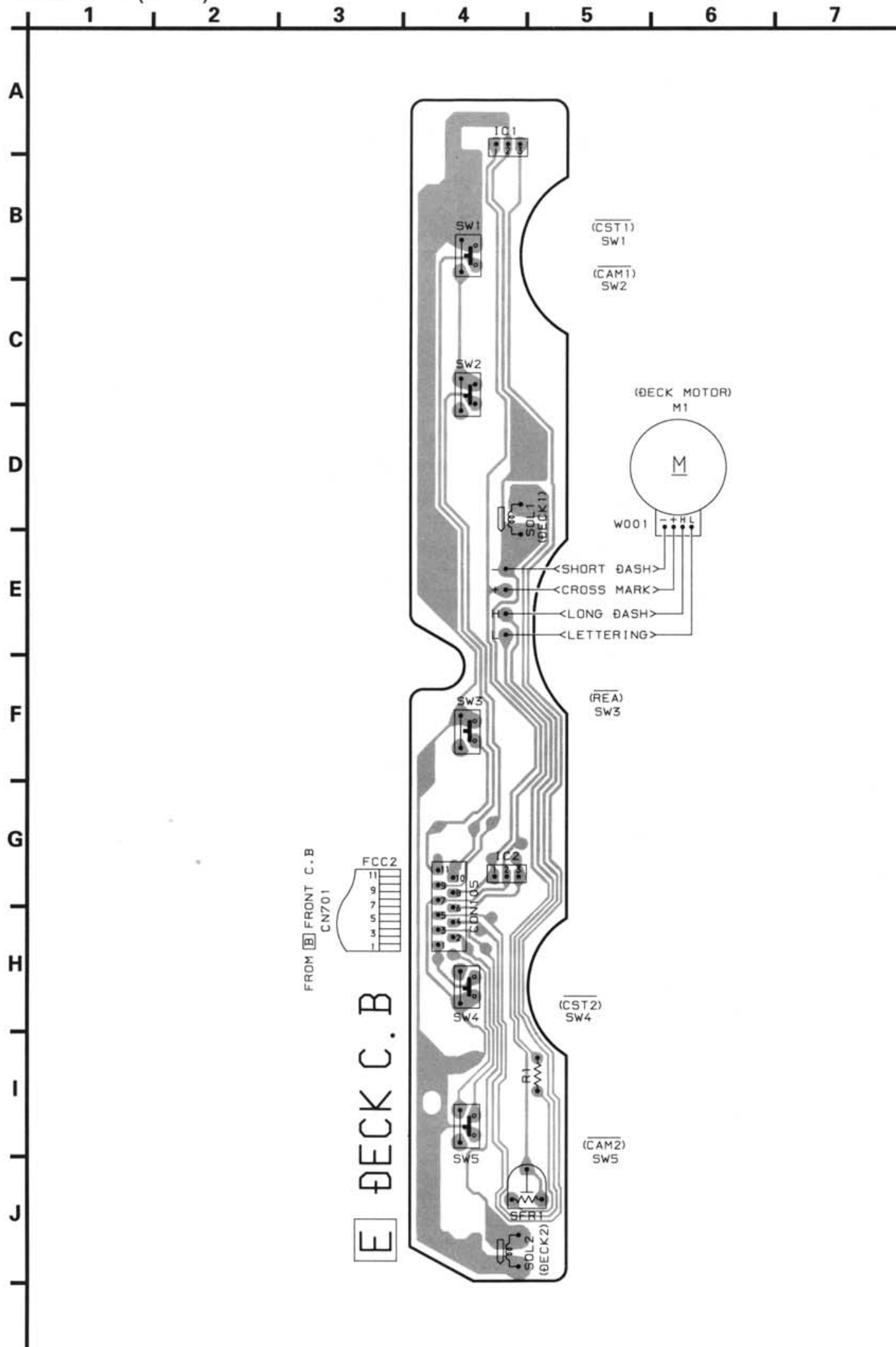
5307
SYNC

S309
EC/REC MUTE

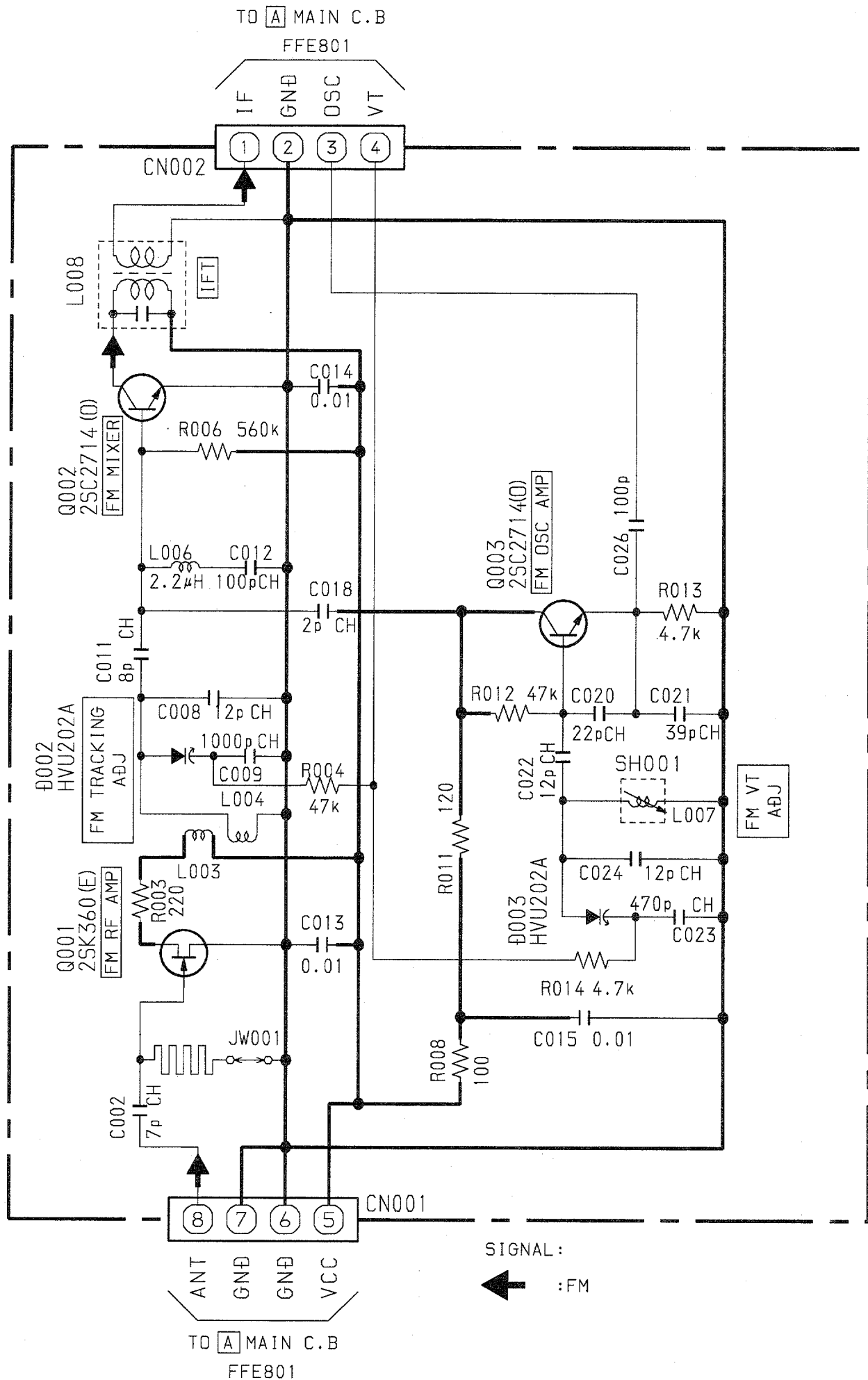
WIRING - 4 (AC)



WIRING - 5 (DECK)

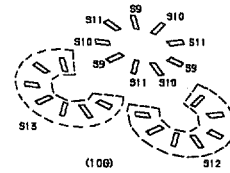
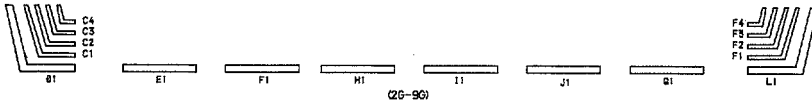
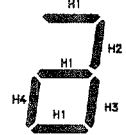
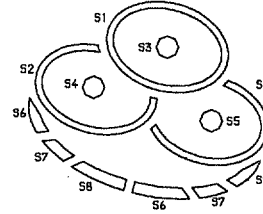
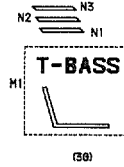
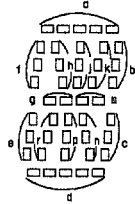
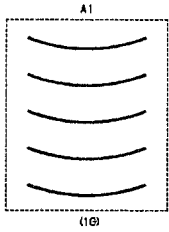
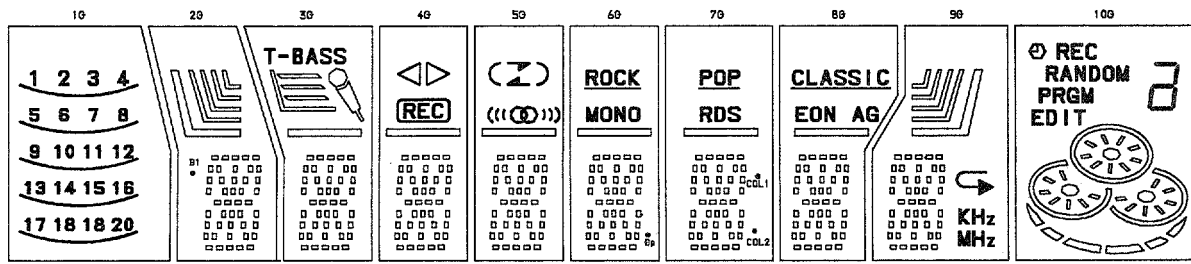


SCHEMATIC DIAGRAMA - 4 (TUNER FRONT END)



FL GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT



ANODE CONNECTION

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G
P1	20	d	d	d	d	d	d	d	d	S1
P2	19	n	n	n	n	n	n	n	n	S9
P3	18	p	p	p	p	p	p	p	p	S10
P4	17	r	r	r	r	r	r	r	r	S11
P5	16	e	e	e	e	e	e	e	e	S3
P6	15	c	c	c	c	c	c	c	c	S2
P7	14	g	g	g	g	g	g	g	g	S13
P8	13	m	m	m	m	m	m	m	m	S4
P9	12	f	f	f	f	f	f	f	f	S12
P10	11	b	b	b	b	b	b	b	b	S5
P11	10	k	k	k	k	k	k	k	k	S6
P12	9	j	j	j	j	j	j	j	j	S7
P13	8	h	h	h	h	h	h	h	h	S8
P14	7	a	a	a	a	a	a	a	a	EDIT
P15	6	Ø1	E1	F1	H1	Øp	COL2	Q1	MHz	PRGM
P16	5	C1	M1	REC	((∞))	I1	COL1	EON	KHz	RANDOM
P17	4	C2	N1	◀	⌒	MONO	J1	AG	↷	REC
P18	3	C3	N2	▶	⌒	—	RDS	—	L1	⌚
P19	2	C4	N3	⌒	⌒	ROCK	—	CLASSIC	F1	H1
P20	1	B1	⌒	⌒	⌒	POP	⌒	⌒	F2	H2
P21	A1	⌒	⌒	⌒	⌒	⌒	⌒	⌒	F3	H3
P22	⌒	⌒	⌒	⌒	⌒	⌒	⌒	⌒	F4	H4

TRANSISTOR ILLUSTRATION



E C B

KTA1266GR
KTC3198GR



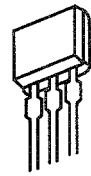
E C B

CSA1585BC
CC5551



B C E

2SB1370



B C E

2SC4115S



S D G

2SK2541



E C B

KTA1267



B C E

2SB1342
2SB1625
2SD1933
2SD2494
2SB1344



E C B

DTC144ES
DTA114YS
DTA114ES
DTA144ES
DTC114ES
DTC143ES
KTC3199GR
KTA1272Y
DTC114YS



S D G

2SJ460

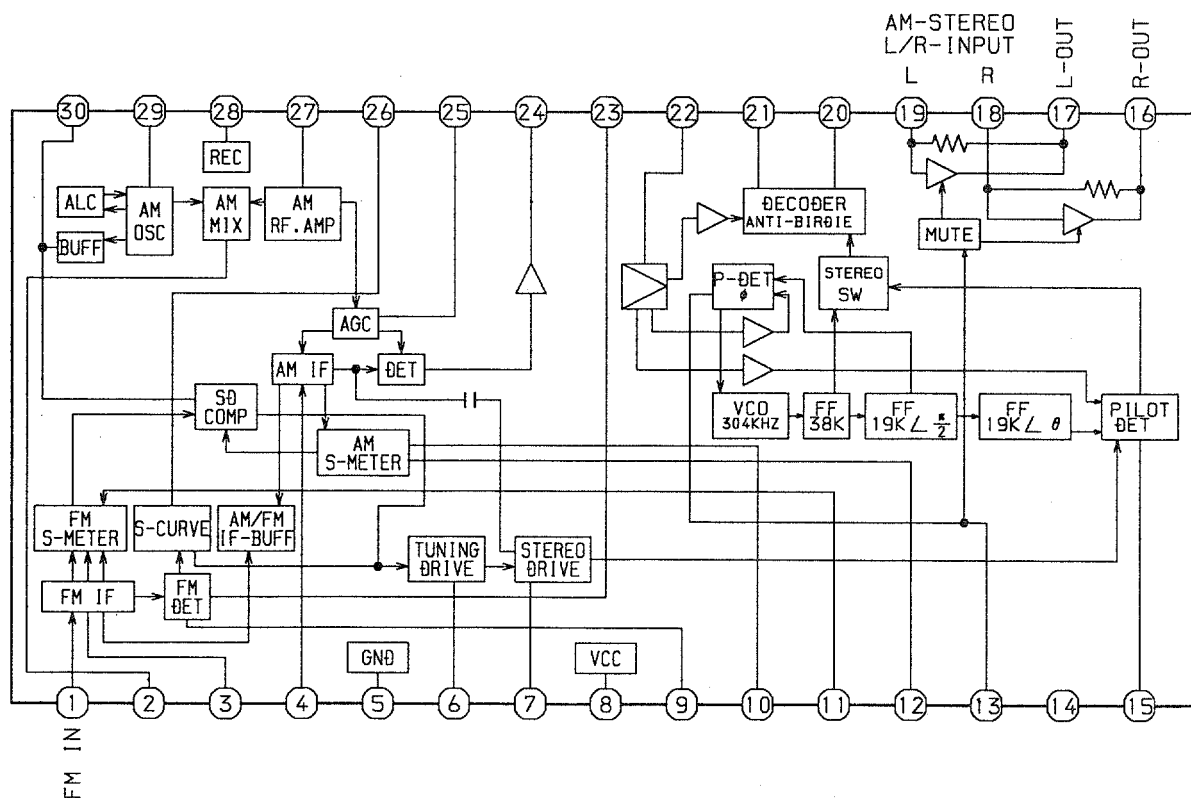
IC DESCRIPTION

IC, M38B59MFH-P101FP

Pin No.	Pin Name	I/O	Description
1	I-JOG	I	Multi Jog A/D input.
2	I-RE	I	Volume A/D input.
3	I-HOLD	I	Power failure detection, "L" to stop clock and main memory.
4	I-SPEANA	I	A/D iutput for spectrum analyser level display.
5,6	I-KEY 2,1	I	KEY 2,1 A/D input.
7	►PRESET	O	►PRESET LED ON/OFF output.
8	O-SHIFT	O	Microprocessor clock shift output.
9	I-RMC	I	System remote control input.
10	I-RESET	I	System reset.
11	O-PB1/PB2	O	Playback DECK1 and DECK2 switch output.
12	NC	–	Not used.
13	VSS	–	GND.
14,15	XIN, XOUT	I/O	4.19MHz oscillator circuit.
16	VCC	–	Power supply.
17	O-SOL1	O	DECK 1 solenoid output.
18	O-SOL2	O	DECK 2 solenoid output.
19	■SET	O	■SET LED ON/OFF output.
20	O-BIAS	O	DECK bias ON/OFF output.
21	I-WRQ	I	CD WRQ input.
22	O-CD_ON/TU_ON	O	CD power ON/OFF output / Tuner power ON/OFF output.
23	O-POWER	O	System power supply ON/OFF output.
24	▶▶/▶▶UP	O	▶▶/▶▶UP LED ON/OFF output.
25	O-DSC	O	E-VR / SOUND / FUNCTION IC data output/ PLL shift register data output.
26	O-CLK	O	CLK for PLL shift register.
27	◀◀/◀◀DOWN	O	◀◀/◀◀DOWN LED ON/OFF output.
28	VEE	–	Power supply for FL display.
29	O-PLL_CE	O	PLL IC chip enable output.
30	O-MOTOR	O	DECK motor ON/OFF output.
31	O-RMT	O	DECK2 REC MUTE ON/OFF output.
32	K-SCAN	O	Key scan output.
33~42	G10~G1	O	FL grid G10~G1 output.
43~48	P22~P17	O	FL sigment P22~P17 output.
49	P16	O	FL sigment P16 output.
50	P15	O	FL sigment P15 output.
51	P14	O	FL sigment P14 output.
52	P13	O	FL sigment P13 output.
53	P12	O	FL sigment P12 output.
54	P11	O	FL sigment P11 output.
55	P10	O	FL sigment P10 output.
56	P9/AM10K	O/I	FL sigment P9 output / AM10K data input.
57	P8/TMBASE	O/I	FL sigment P8 output / TM-BASE data input.
58	P7/CST2	O/I	FL sigment P7 output / DECK 2 cassette detect switch data input.

Pin No.	Pin Name	I/O	Description
59	P6/ $\overline{\text{CAM2}}$	O/I	FL segment P6 output / DECK2 CAM switch data input.
60	P5/AUTO1	O/I	FL segment P5 output / DECK1 AUTO stop switch data input.
61	P4/AUTO2	O/I	FL segment P4 output / DECK2 AUTO stop switch data input.
62	P3/ $\overline{\text{CAM1}}$	O/I	FL segment P3 output / DECK1 CAM stop switch data input.
63	P2/ $\overline{\text{CST1}}$	O/I	FL segment P2 output / DECK1 cassette detect switch data input.
64	P1/ $\overline{\text{REA}}$	O/I	FL segment P1 output / DECK2 side A record OK switch data input.
65	O-DISH_R	O	CD turntable reverse rotation output.
66	O-DISH_F	O	CD turntable forward rotation output.
67	I-DISH_SENS	I	CD turntable photo sensor input.
68	O-CD_CE	O	CD enable output.
69	$\blacksquare$ CLEAR	O	$\blacksquare$ CLEAR LED ON/OFF output.
70	O-CD_CLK	O	CD clock output.
71	O-CD	O	CD data output.
72	O-TUNE/IFC/SUBQ	I	Tuner TUNE input / Tuner IF count serial data input / CD SUBQ data input.
73	AVSS	-	GND.
74	VREF	-	Power supply.
75	I-ST/DRF	I	Tuner STEREO input / CD DRF input.
76	O-CD_OPEN	O	CD tray open data output.
77	O-CD_CLOSE	O	CD tray close data output.
78	I-CD_SW	I	CD mecha switch input.
79	O-CD_LED	O	CD flash window LED output.
80	NC	-	Not connected.

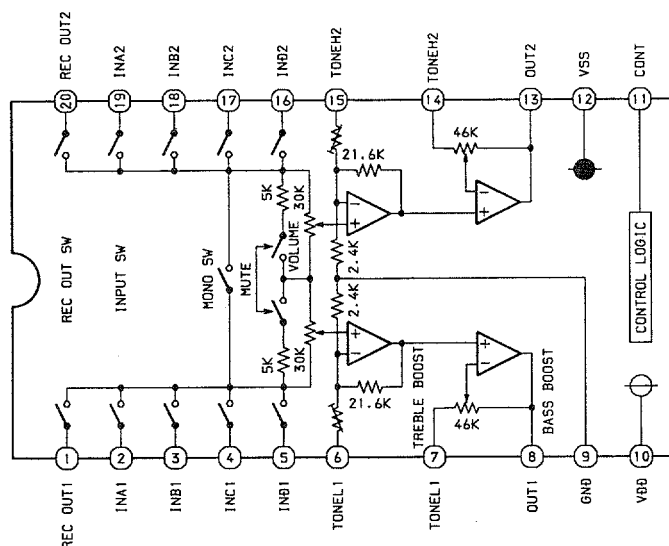
IC, LA1837NL



IC, LC72131D

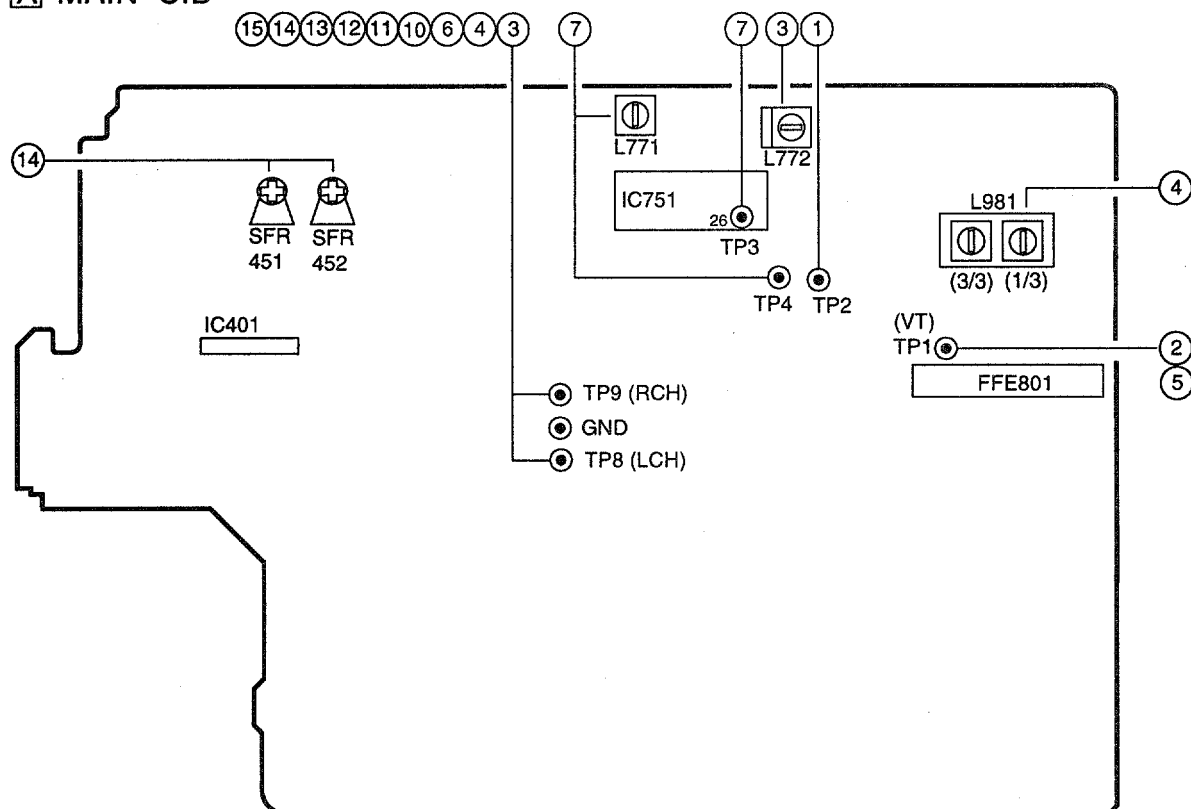
Pin No.	Pin Name	I/O	Description																								
1	XIN	I/O	A crystal oscillator (4.5MHz) is connected between these pins.																								
22	XOUT																										
2	NC	–	Not used.																								
3	CE	I	To enable the IC. Active "H".																								
4	DI	I	Serial data input from CPU (μP M38B59MFH-P101FP) when relevant key is operated. Active "H".																								
5	CL	I	Synchronization clock for serial data in (DI) or serial data out (DO).																								
6	DO	O	Serial data output to CPU (μP M38B59MFH-P101FP).																								
7	T-BASE	O	Outputs a reference clock signal (8Hz) for the clock.																								
8	MONO / BEAT	O	Outputs "H" when MONO / BEAT is switched.																								
9	FM / SW	O	Output "L" or "H" as follows: <table><tr><td colspan="2">2 BAND</td><td colspan="3">3 BAND</td><td colspan="3">3 BAND</td></tr><tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr><tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr></table>	2 BAND		3 BAND			3 BAND			AM	FM	LW	MW	FM	MW	SW	FM	H	L	H	H	L	H	L	L
2 BAND		3 BAND			3 BAND																						
AM	FM	LW	MW	FM	MW	SW	FM																				
H	L	H	H	L	H	L	L																				
10	MW/SW	O	Outputs "L" or "H" as follows: <table><tr><td colspan="2">2 BAND</td><td colspan="3">3 BAND</td><td colspan="3">3 BAND</td></tr><tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr><tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr></table>	2 BAND		3 BAND			3 BAND			AM	FM	LW	MW	FM	MW	SW	FM	L	L	H	L	L	L	H	L
2 BAND		3 BAND			3 BAND																						
AM	FM	LW	MW	FM	MW	SW	FM																				
L	L	H	L	L	L	H	L																				
11	IF-MUTE	O	To control internal counter.																								
12	IF-IN	I	General purpose counter input.																								
13	TUNE	I	Receives "L" when station is tuned.																								
14	NC	–	Not used.																								
15	AM-IN	I	Receives the AM local oscillator frequency signal.																								
16	FM-IN	I	Receives the FM local oscillator frequency signal.																								
17	VDD	–	Supply power to IC (+5V).																								
18	PD	O	PLL charge pump output.																								
19	A-IN	I	The MOS transistor for PLL active low pass filter.																								
20	A-OUT	O																									
21	VSS	–	Ground.																								

IC, M62439SP

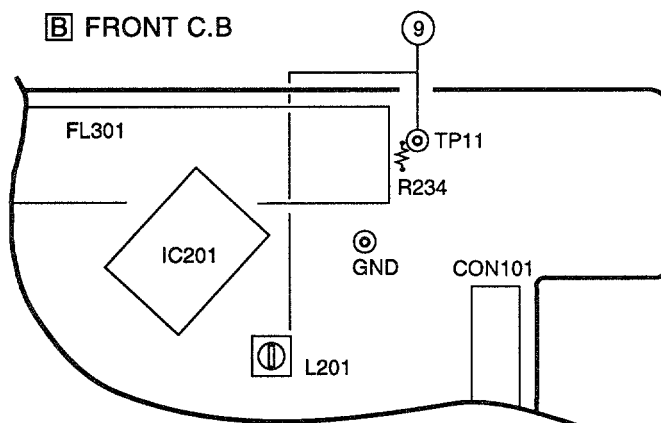


ADJUSTMENT <TUNER / DECK>

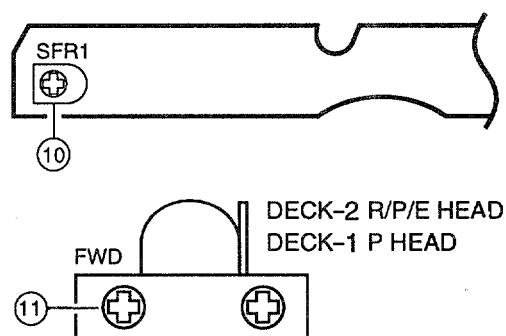
A MAIN C.B



B FRONT C.B



E DECK C.B



< TUNER SECTION >

- 1. Clock Frequency Check**
 Settings : • Test point : TP2
 Method : Set to AM 1710kHz and check that the test point is 2160kHz $\pm$ 45Hz
- 2. AM VT Check**
 Settings : • Test point : TP1
 Method : Set to AM 1710kHz and AM 530kHz and check that the test point is less than 8.5V(1710kHz) and more than 0.6V(530kHz).
- 3. AM IF Adjustment**
 Settings : • Test point : TP8(Lch), TP9(Rch)
 • Adjustment location : L772.....1000kHz
 Method : The output level at 1000kHz is adjusted to maximum by L772.
- 4. AM Tracking Adjustment**
 Settings : • Test point : TP8(Lch), TP9(Rch)
 • Adjustment location : L981(1/3).....1000kHz
 Method : The output level at 1000kHz is adjusted to maximum by L981(1/3).
- 5. FM VT Check**
 Settings : • Test point : TP1
 Method : Set to FM 108.0MHz and check that the test point is less than 8.0V. Set to FM 87.5MHz and check that the test point is more than 0.5V.
- 6. FM Tracking Check**
 Settings : • Test point : TP8(Lch), TP9(Rch)
 Method : Set to FM 98.0MHz and check that the test point is less than 9.0dB μ V.

7. DC Balance / Mono Distortion Adjustment
 Settings : • Test point : TP3, TP4 / TP8, TP9
 • Adjustment location : L771
 • Input level : 60 dBμV
 Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 becomes 0V ±0.04V.
 Next, check that the distortion is less than 1.3%.

8. Auto Stop Level Check
 AM
 Settings : • Input level : 37 ~ 62dBμV.....1000kHz
 Method : Pressing up or down key until the frequency is change rapidly to search the station. The search stop at 1000kHz and TUNE is displayed when the input signal level is within 37 ~ 62dBμV.

- FM
 Settings : • Input level : 25 ~ 35dBμV.....98.0MHZ
 Method : Pressing up or down key until the frequency is change rapidly to search the station. The search stop at 1000kHz and TUNE is displayed when the input signal level is within 25 ~ 35dBμV.

9. μ-con OSC Adjustment
 Settings : • Test point : TP11
 • Adjustment location : L201
 Method : Insert AC plug with pressing TUNER function key.
 Adjust L201 so that the frequency across the test point is 233.74 ~ 234.20Hz.

< DECK SECTION >

10. Tape Speed Adjustment
 Settings : • Test tape : TTA-100
 • Test point : TP8,TP9
 • Adjustment location : SFR1
 Method : Play back the test tape and adjust SFR1 so that the frequency counter reads 3000Hz ± 5Hz.

11. Head Azimuth Adjustment (DECK 1, DECK 2)
 Settings : • Test tape : TTA-330
 • Test point : TP8,TP9
 • Adjustment location : Azimuth adjustment screw
 Method : Play back the 8kHz signal of the test tape and adjust screw so that the output becomes maximum. Perform on FWD PLAY and REV PLAY mode.

12. PB Frequency Response Check (DECK 1, DECK 2)
 Settings : • Test tape : TTA-330
 • Test point : TP8,TP9
 Method : Play back the 315Hz and 8kHz signals of the test tape and check that the output ratio of the 8kHz signal with respect to that of the 315Hz signal is within 5dB.

13. PB Sensitivity Check (DECK 1, DECK 2)
 Settings : • Test tape : TTA-200
 • Test point : TP8,TP9
 Method : Play back the test tape and check the signal level of the test point is 110mV ± 3.0dB.

14. REC/PB Frequency Response Adjustment
 Settings : • Test tape : TTA-602
 • Test point : TP8,TP9
 • Input signal : 1kHz / 8kHz, -26dBV (LINE IN)
 • Adjustment location : SFR451(LCH)
 SFR452(RCH)

Method : Apply 1kHz signal and REC mode.
 Then adjust OSC attenuator so that the output level at the TP8,TP9 becomes 7.5~9.5mV. Record and play back the 1kHz and 8kHz signals and adjust SFRs so that the output of the 8kHz signal becomes 0dB ±0.5dB with respect to that of the 1kHz signal.

15. REC/PB Sensitivity Check
 Settings : • Test tape : TTA-602
 • Test point : TP8,TP9
 • Input signal : 1kHz, -6dBV (LINE IN)
 Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8,TP9 becomes 75~95mV. Record and play back the 1kHz signals and check that the output is -1.0dB ± 3.5dB.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

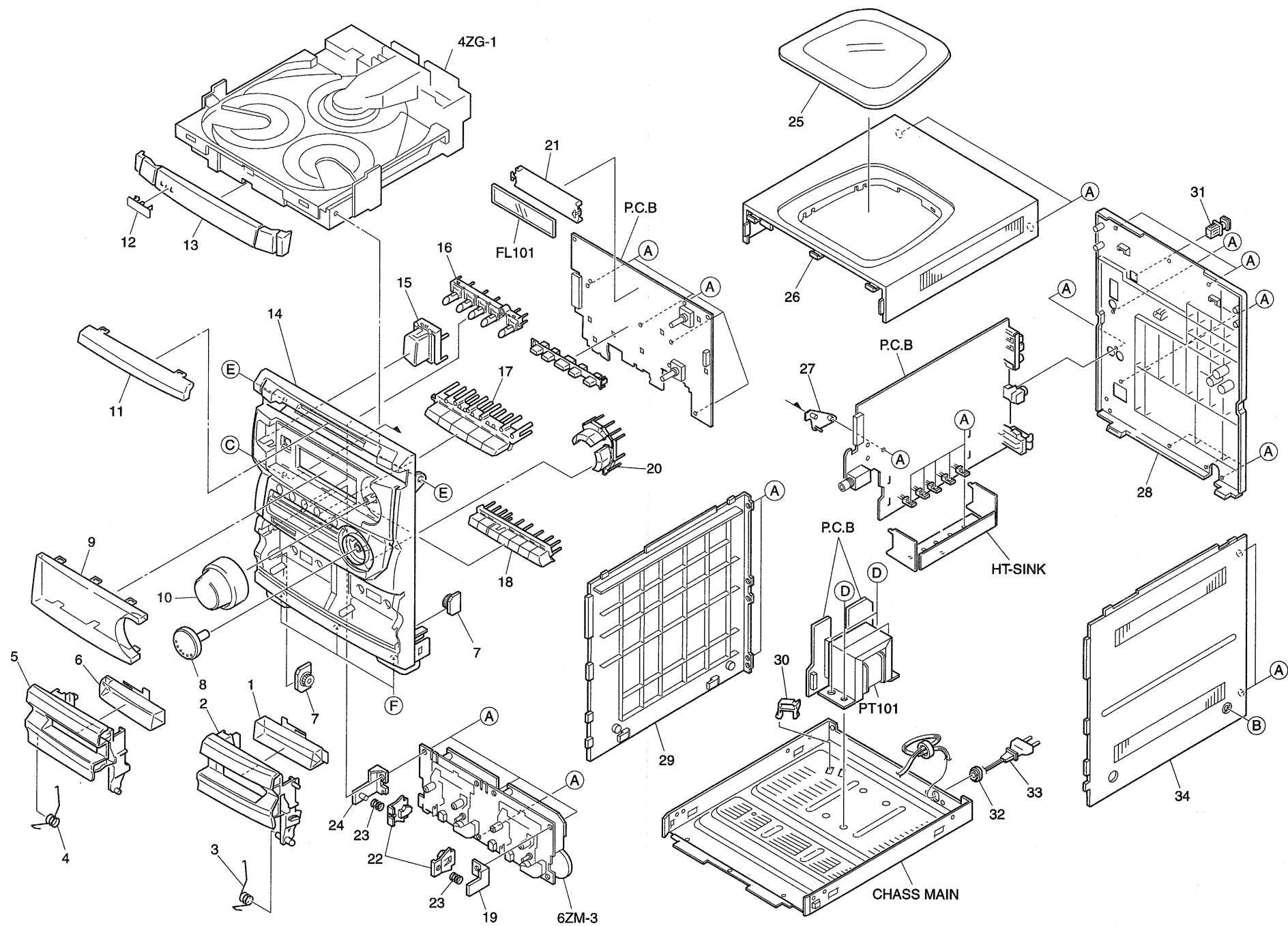
IHF Sensitivity :	Less than 10dBμV
(THD 3%)	[at 87.5MHz] Less than 9.0dB [at 98.0/108.0MHz]
S/N 50dB Quieting sensitivity :	
(Stereo)	Less than 35dB [at 98.0MHz]
Signal to noise ratio :	More than 68dB (mono) More than 66dB (stereo) [at 98.0MHz]
Distortion :	Less than 1.2% (mono) Less than 2.0% (stereo) [at 98.0MHz]
Stereo separation :	More than 25dB [at 98.0MHz]

<AM SECTION>

Sensitivity :	Less than 60dBμV
(S/N 20 dB)	[at 600kHz] Less than 58dBμV [at 1000 / 1400kHz]
Signal to noise ratio :	More than 36dB (mono) More than 34dB (stereo) [at 1000kHz]
Distortion :	Less than 1.5% (mono) Less than 4.0% (stereo) [at 1000kHz]
Stereo separation :	More than 15dB [at 1000kHz]

<DECK SECTION>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.25% (R.M.S)
Take-up torque :	30 ~ 55g/cm (FWD, REV)
F.F torque :	75 ~ 180g/cm
REW torque :	75 ~ 130g/cm
Back tension :	2 ~ 7g/cm
PB Output level :	3.0V ± 3dB
Distortion (REC/PB) :	Less than 2.0% (NORM)
Noise level (PB) :	Less than 20mV (NORM)
Noise level (REC/PB) :	Less than 30mV (NORM)
Test tape :	NORM : TTA-602

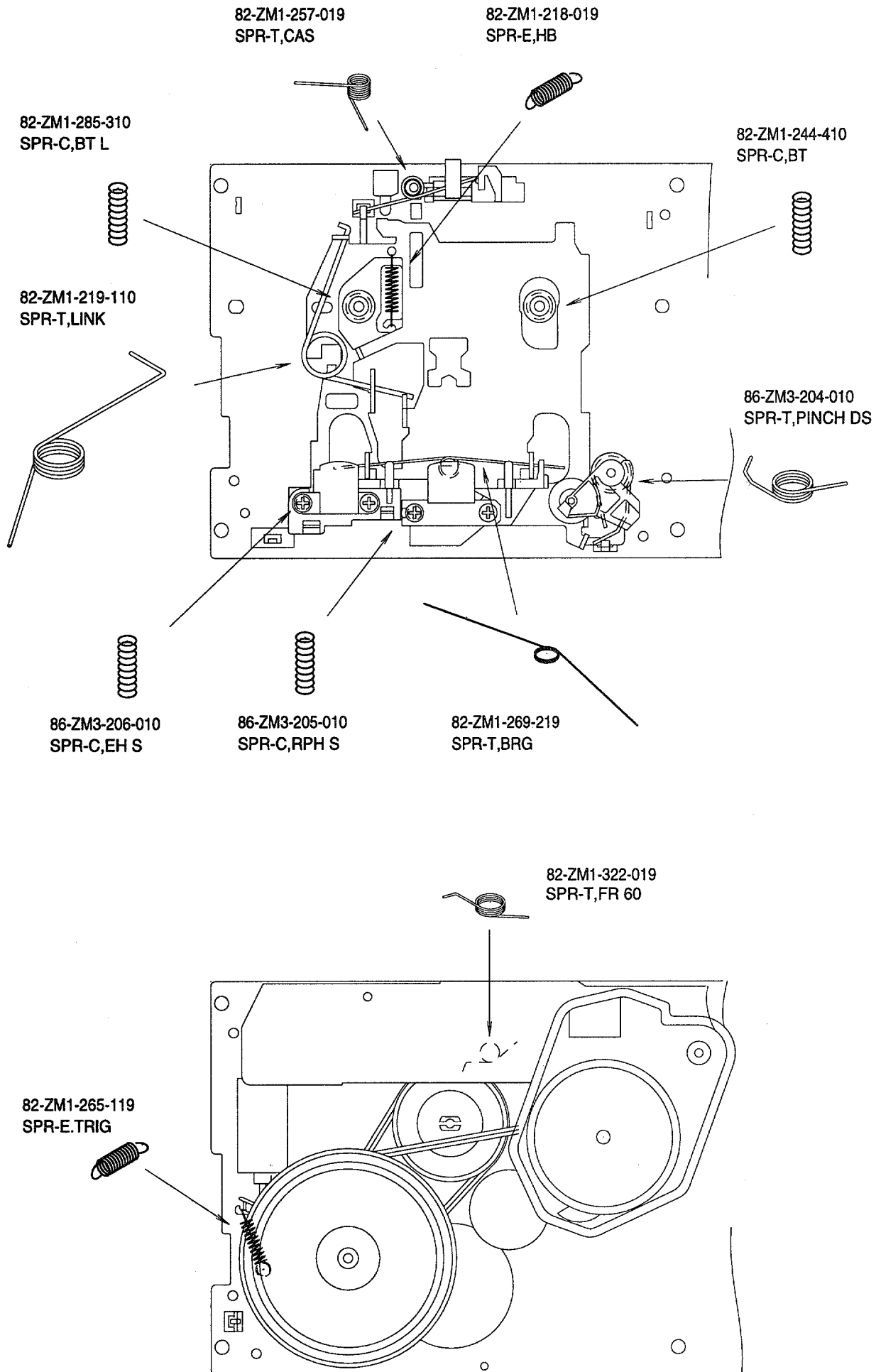


MECHANICAL PARTS LIST 1 / 1

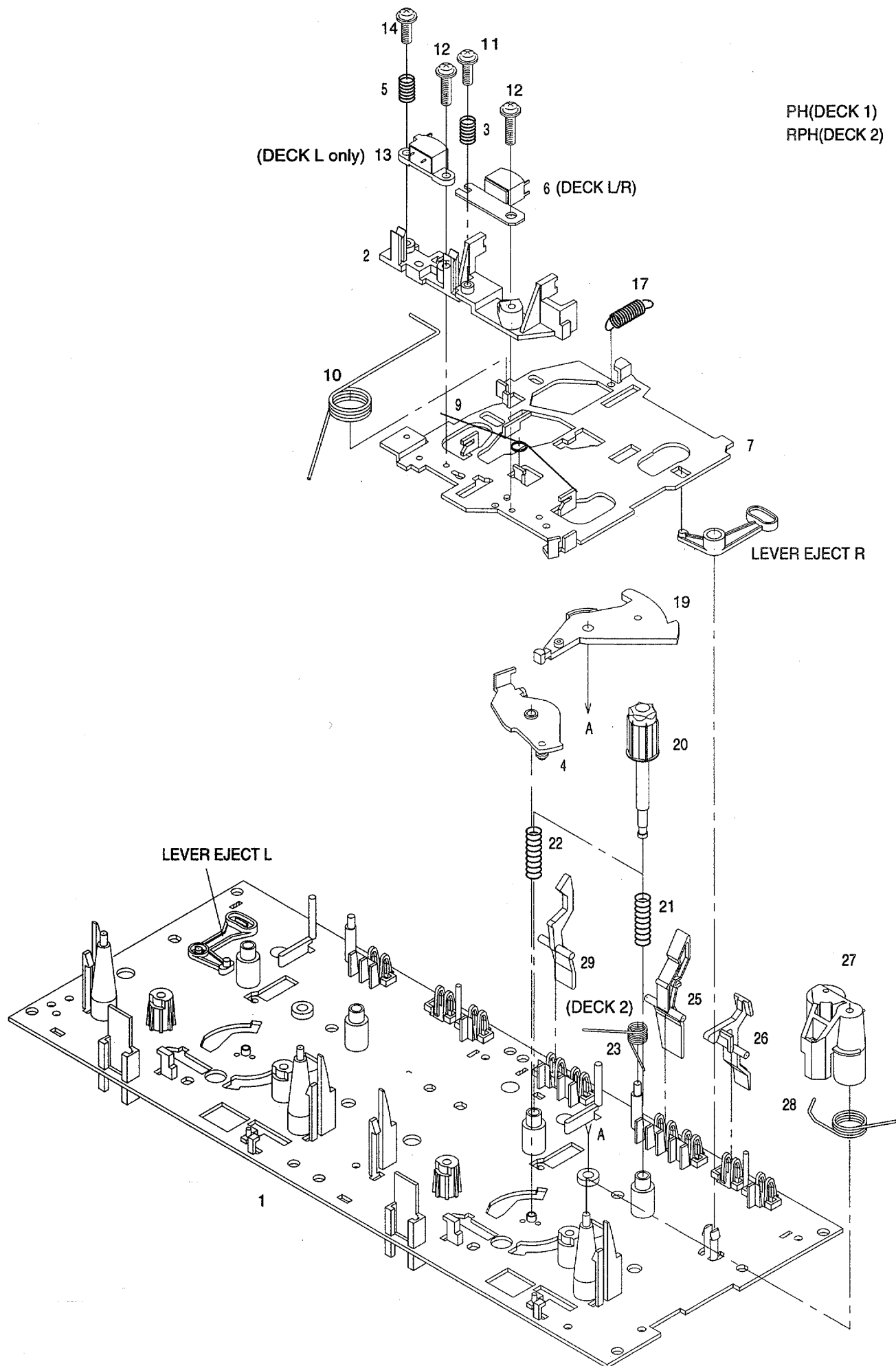
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-NF9-008-010		WINDOW, CASS 2
2	8Z-NF9-004-010		BOX, CASS 2
3	82-NF5-219-010		SPR-T, EJECT 2 (SIN)
4	82-NF5-218-010		SPR-T, EJECT 1 (SIN)
5	8Z-NF9-003-010		BOX, CASS 1 1WAY
6	8Z-NF9-007-010		WINDOW, CASS 1
7	87-NF8-220-010		DMPR, 150
8	8Z-NF9-010-010		KNOB, RTRY JOG
9	8Z-NF9-006-010		WINDOW, DISP H<222LH>
9	8Z-NF9-062-010		WINDOW, DISP H S333<333LH>
9	8Z-NF9-039-010		WINDOW, DISP U<222U>
10	8Z-NF9-009-010		KNOB, RTRY VOL
11	8Z-NF9-005-010		WINDOW, CD
12	82-NE6-067-010		BADGE, AIWA 30N
13	8Z-NF9-002-010		PANEL, TRAY H
14	8Z-NF9-031-010		CABI, FR U
15	8Z-NF9-011-010		KEY, POWER
16	8Z-NF9-012-010		KEY, FUN
17	8Z-NF9-013-010		KEY, ASSY OPE 1W
18	8Z-NF9-016-010		KEY, CD
19	87-NF4-217-010		HLDR, LOCK 2
20	8Z-NF9-017-010		KEY, GEQ
21	82-NF7-210-110		GUIDE, FL (*)
22	82-NF5-229-010		PLATE, LOCK
23	86-NF9-224-010		SPR-C, LOCK
24	87-NF4-216-010		HLDR, LOCK 1
25	86-NF2-001-010		WINDOW, TOP
26	8Z-NF9-042-010		PANEL, TOP V-2
27	88-NF5-208-010		HLDR, PWB-M N
28	8Z-NF9-022-010		CABI, REAR LHSTM<222LH>
28	8Z-NF9-028-010		CABI, REAR LHSTM S333<333LH>
28	8Z-NF9-021-010		CABI, REAR USTM<222U>
29	8Z-NB8-011-110		PANEL, LEFT V-2
30	87-NF4-221-010		HLDR, CABLE
31	84-ZG1-245-210		CAP, OPTICAL
32	87-085-185-010		BUSHING, AC CORD(E)<222LH, 333LH>
32	87-085-189-010		BUSHING, CORD (U)<222U>
33	87-A80-110-010		AC CORD ASSY, U SPT-2W<222U>
33	87-050-079-010		AC-CORD ASSY, E<222LH, 333LH>
34	8Z-NF9-043-010		PANEL, RIGHT S V-2
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-067-641-010		UTT2+3-8(W/O SLOT)BL
C	87-723-096-410		QT2+3-10W/O SLOT BL
D	87-067-975-010		S-SCREW, IT+4-8
E	87-721-097-410		QT2+3-12 GLD
F	87-067-689-010		TAPPING SCREW, BVTT+3-8

MECHANISM SPRING APPLICATION POSITION



TAPE MECHANISM EXPLODED VIEW 1 / 1



TAPE MECHANISM PARTS LIST 1 / 1

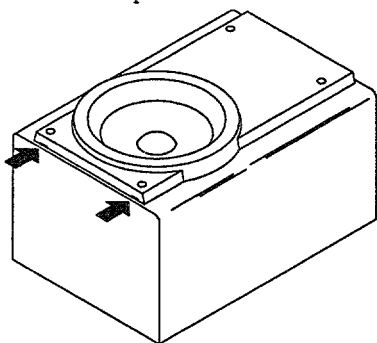
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZM3-212-010		CHAS ASSY,SS	31	82-ZM1-223-010		GEAR, PLAY
2	86-ZM3-202-010		BASE, HEAD S	32	82-ZM3-305-019		GEAR, CAM M2
3	86-ZM3-205-010		SPR-C, RPH S	33	82-ZM1-227-319		LVR, TRIG
4	82-ZM1-333-210		PLATE, LINK 2	34	82-ZM3-306-110		LVR, FR M2
5	86-ZM3-206-010		SPR-C, EH S	35	82-ZM1-265-119		SPR-E, TRIG
6	87-A90-403-019		HEAD, RPH MS15R	36	85-ZM3-203-019		S-SCREW MOTOR M3
7	86-ZM3-201-010		CHAS, HEAD S	37	82-ZM1-236-019		CAPSTAN N 2-41.5
8	87-045-347-019		MOT, SHU2L 70(M1)	37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
9	82-ZM1-269-219		SPR-T, BRG	38	82-ZM1-322-019		SPR-T, FR60
10	82-ZM3-323-119		SPR-T, LINK	39	82-ZM1-220-219		GEAR, IDLER
11	86-ZM3-209-010		S-SCREW, ASIMUTHS	40	82-ZM3-616-019		RING MAGNET 4
12	86-ZM3-207-010		S-SCREW, RPH	41	82-ZM1-216-319		GEAR, REEL
13	87-A90-404-019		HEAD, EH LE15B	42	85-ZM3-213-010		S-SCREW, HLDR MOT 3
14	86-ZM3-208-010		S-SCREW, EH	43	82-ZM1-225-219		GEAR, FR
15	86-ZM3-203-010		HLDR, MOTS	44	82-ZM1-226-019		GEAR, REW
16	82-ZM1-245-210		HLDR, IC	45	82-ZM3-333-210		SLIP DISK ASSY 2
17	82-ZM1-218-019		SPR-E, HB	46	82-ZM1-338-010		BELT FR4
18	86-ZM3-211-010		BELT, RS	47	82-ZM1-349-019		FLY-WHL RW (DECK L)
19	82-ZM1-222-219		LVR, PLAY	47	82-ZM3-331-019		FLY-WHL R2W (DECK R)
20	82-ZM1-217-419		REEL, TABLE	A	87-251-071-417		U+2.6-4
21	82-ZM1-244-519		SPR-C, BT	B	80-ZM6-243-019		SH, 1.75-3.6-0.5 SLT
22	82-ZM1-285-410		SPR-C, BT L				
23	82-ZM1-257-019		SPR-T, CAS				
24	82-ZM3-221-010		PULLEY, MOT 2M				
25	82-ZM1-242-019		LE-VR, CAS				
26	82-ZM1-243-019		LVR, STOP				
27	82-ZM1-344-119		LVR ASSY, PINCH				
28	86-ZM3-204-010		SPR-T, PINCHDS				
29	82-ZM1-240-119		LVR, REC (DECK 2)				
30	86-ZM3-210-010		BELT, PS				

SPEAKER DISASSEMBLY INSTRUCTIONS

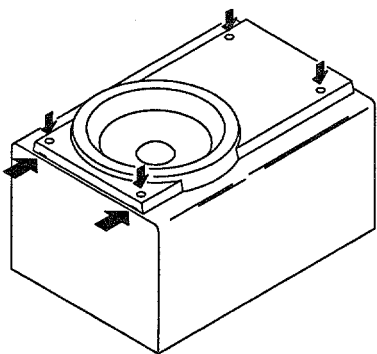
Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



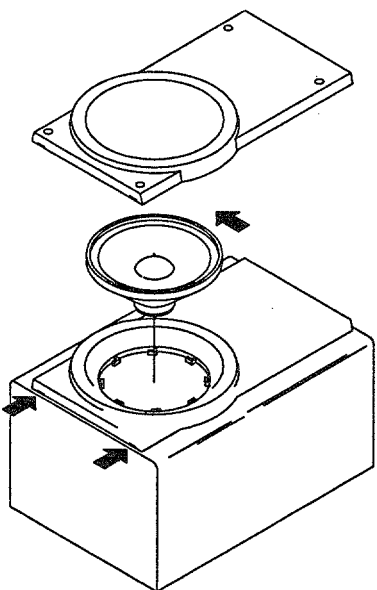
Type.2

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.

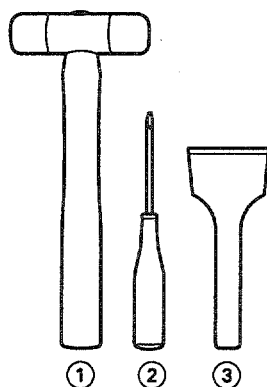


Type.3

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counterclockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



Type.4



TOOLS

- ① Plastic head hammer
- ② (⊖) flat head screwdriver
- ③ Cut chisel

How to Remove the PANEL, FR

1. Insert the (⊖) flat head screwdriver tip into the gap between the PANEL, FR and the PANEL, SPKR. Tap the head of the (⊖) flat head screwdriver with the plastic hammer head, and create the clearance as shown in Fig-1.
2. Insert the cut chisel in the clearance, and tap the head of the cut chisel with plastic hammer as shown in Fig-2, to remove the PANEL, FR.
3. Place the speaker horizontally. Tap head of the cut chisel with plastic hammer as shown in Fig-3, and remove the PANEL, FR completely.

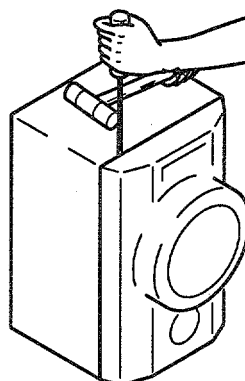


Fig-1

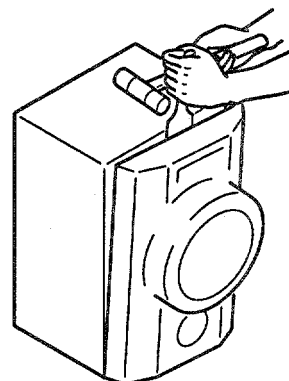


Fig-2

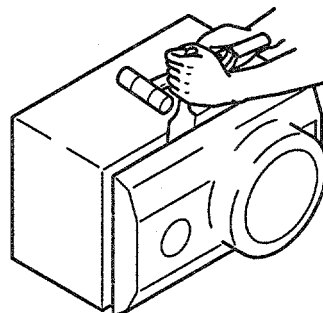


Fig-3

How to Attach the PANEL, FR

Attach the PANEL, FR to the PANEL, SPKR. Tap the four corners of the PANEL, FR with the plastic hammer to fit the PANEL, FR into the PANEL, SPKR completely.

SPEAKER PARTS LIST (SX-NA332 : YUSTL / SX-NS332 : YLSTCC, YLSTC1C)

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NS7-611-010		CORD, SPKR
2	87-NSH-612-010		SPKR, CERAMIC ASSY
3	87-NSJ-604-010		SPKR, W 120<NA332YUSTL>
3	87-NSJ-602-010		SPKR, 120<NS332YLSTCC>
3	8Z-NSK-602-010		SPKR, W 120<NS332YLSTC1C>
4	8Z-NSK-001-010		PANEL, FR

SPEAKER PARTS LIST (SX-NS552 : YLSTCC)

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NSH-612-010		SPKR, CERAMIC ASSY
2	87-NS7-611-010		CORD, SPKR
3	8Z-NSH-004-010		GRILLE, FRAME ASSY
4	8Z-NSH-001-010		PANEL, FR
5	8Z-NSH-002-010		PANEL, BA
6	8Z-NSH-003-010		PANEL, RING(W)
7	8Z-NSH-007-010		PROTECTOR
8	83-NS8-606-010		SPKR, T 50
9	8Z-NSJ-601-010		SPKR, W 130

SPEAKER PARTS LIST (SX-NA335 : YUSTL)

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NS7-611-010		CORD, SPKR
2	87-NSH-612-010		SPKR, CERAMIC ASSY
3	87-NSJ-604-011		SPKR, W 120
4	88-NSJ-031-010		PANEL, FR S

SPEAKER PARTS LIST (SX-R275)

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-YS1-004-010		GRILLE FRAME ASSY
2	87-YS6-002-010		SPKR, CORD Y
3	87-YS6-601-010		SPKR, 100

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-NF9-902-010		IB, LH(ESP)M<2LH>
1	8Z-NF9-912-010		IB, LH(ESP)M -333<3LH>
1	8Z-NF9-903-010		IB, U(ESP)M<U>
2	87-043-115-010		ANT, FEEDER FM
3	87-A91-017-010		PLUG, CONVERSION JT-0476<2LH, 3LH>
4	8Z-NF9-701-010		RC UNIT, ZAS02
5	87-006-225-010		AM LOOP ANT NC2

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G- -	
G- -	
G- -	

アイワ株式会社
AIWA CO., LTD.

9301896, 931261

Tokyo Japan

aiwa



NSX-A222

NSX-A223

NSX-S222

NSX-S333

COMPACT DISC /
STEREO CASSETTE RECEIVER

• TYPE: U<A222/A223>
LH<S222/S333>

SIMPLE MANUAL

• Replace this Service Manual with "Revision Publishing" when it is issued.

S/M Code No. 09-98C-312-6T1

MANUAL
SERVICE

ELECTRICAL MAIN PARTS LIST - 1/8

NOTE: The characters in the suffix column indicate the part usage.

LH(Lo)	.....	XX	.....	A
U	.....	XX	.....	B
LH(Hi)	.....	XX	.....	C
REF.NO	PARTS NO.	KANRI NO.	DESCRIPTION	SUFFIX
*	82-NF7-210-110		GUIDE, FL (*)	ABC
*	8Z-NF9-201-010		GUIDE, OPE 1W	ABC
	8Z-NF9-202-010		GUIDE, OPE R	ABC
C	101 87-A11-140-080		CAP, TC U 0.047-50 K B	ABC
C	153 87-010-221-080		CAP, ELECT 470-10V	ABC
C	151 87-A11-142-080		CAP, TC U 0.068-50 K B	ABC
C	204 87-010-246-040		CAP, E 47-35 SME	ABC
C	201 87-010-421-040		CAP, E 4.7-50 5L	ABC
C	202 87-010-421-040		CAP, E 4.7-50 5L	ABC
C	203 87-010-560-040		CAP, E 10-50 GAS	ABC
C	205 87-018-205-080		CAP, CERA-SOL 0.022	ABC
C	210 87-010-060-040		CAP, E 100-16	ABC
C	213 87-015-695-040		E/CAP 1UF 50V TAPG	ABC
C	218 87-018-125-080		CAP, CER 330P-50V	ABC
C	217 87-018-125-080		CAP, CER 330P-50V	ABC
C	219 87-018-131-080		CAP, CER 1000P-50V	ABC
C	216 87-018-131-080		CAP, CER 1000P-50V	ABC
C	212 87-018-205-080		CAP, CERA-SOL 0.022	ABC
C	211 87-A10-189-040		CAP, E 220-10	ABC
C	214 87-A11-155-080		CAP, TC U 0.01-16 Z F	ABC
C	221 87-018-104-080		CAP, TC-U 10P-50 SL	ABC
C	222 87-018-128-080		CAP, CERA-SOL SS 560P	ABC
C	220 87-018-205-080		CAP, CERA-SOL 0.022	ABC
C	224 87-018-205-080		CAP, CERA-SOL 0.022	ABC
C	231 87-015-681-040		E/CAP 10-16	ABC
C	230 87-A11-140-080		CAP, TC U 0.047-50 K B	ABC
C	232 87-A11-140-080		CAP, TC U 0.047-50 K B	ABC
C	234 87-A11-140-080		CAP, TC U 0.047-50 K B	ABC
C	244 87-018-117-080		CAP, TC-U 68P-50 SL	ABC
C	241 87-018-117-080		CAP, TC-U 68P-50 SL	ABC
C	243 87-018-117-080		CAP, TC-U 68P-50 SL	ABC
C	242 87-018-117-080		CAP, TC-U 68P-50 SL	ABC
C	245 87-018-117-080		CAP, TC-U 68P-50 SL	ABC
C	246 87-018-118-080		CAP, TC-U 82P-50 B	ABC
C	252 87-018-131-080		CAP, CER 1000P-50V	ABC
C	701 87-018-115-080		CAP, CER 47P-50V	ABC
CN	701 87-099-013-010		CONN, 11P 6216 V	ABC
CON	102 87-099-015-010		CONN, 13P 6216V	ABC
CON	101 87-099-720-010		CONN, 30P TYK-B(P)	ABC
D	151 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	202 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	203 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	201 87-A40-509-080		ZENER, MTZJ6.8C	ABC
D	214 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	217 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	213 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	218 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	215 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	212 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	216 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	219 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	228 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	220 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	229 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	222 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	227 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	221 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	225 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	224 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	226 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	223 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	230 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	237 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	234 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	232 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	238 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	240 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	701 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
D	702 87-020-465-080		DIODE, 1SS133 (110MA)	ABC
FL	301 8Z-NF9-610-010		FL, SVA-10MS12	ABC
IC	202 87-A20-914-010		IC, SPS-442-1-F	ABC
IC	201 8Z-NF9-630-010		C-IC, M38B59MFH-P101FP	ABC
L	201 87-A50-434-010		COIL, CLK 4.19M(TOKO)	ABC
LED	604 87-A40-619-080		LED, SLR-56PT-TE7-W GRN	ABC
LED	609 87-A40-619-080		LED, SLR-56PT-TE7-W GRN	ABC
LED	602 87-A40-619-080		LED, SLR-56PT-TE7-W GRN	ABC
LED	608 87-A40-619-080		LED, SLR-56PT-TE7-W GRN	ABC
LED	605 87-A40-619-080		LED, SLR-56PT-TE7-W GRN	ABC
LED	601 87-A40-619-080		LED, SLR-56PT-TE7-W GRN	ABC
LED	603 87-A40-619-080		LED, SLR-56PT-TE7-W GRN	ABC
Q	101 87-026-218-080		TR, DTC144ES (0.2W)	ABC
Q	102 87-026-218-080		TR, DTC144ES (0.2W)	ABC
Q	152 87-026-609-080		TR, KTA1266GR	ABC
Q	153 87-026-610-080		TR, KTC3198GR	ABC

ELECTRICAL MAIN PARTS LIST - 2/8

O	151	87-026-610-080	TR, KTC3198GR	ABC.....
Q	206	87-026-215-080	TR, DTC114YS	ABC.....
Q	205	87-026-610-080	TR, KTC3198GR	ABC.....
Q	203	87-026-610-080	TR, KTC3198GR	ABC.....
Q	204	87-A30-090-080	FET, 2SK2541	ABC.....
Q	202	87-A30-090-080	FET, 2SK2541	ABC.....
Q	201	87-A30-090-080	FET, 2SK2541	ABC.....
Q	602	87-026-287-080	TR, DTC143ES	ABC.....
Q	606	87-026-287-080	TR, DTC143ES	ABC.....
Q	601	87-026-287-080	TR, DTC143ES	ABC.....
Q	604	87-026-287-080	TR, DTC143ES	ABC.....
Q	605	87-026-287-080	TR, DTC143ES	ABC.....
Q	603	87-026-287-080	TR, DTC143ES	ABC.....
Q	701	87-026-245-080	TR, DTC114ES	ABC.....
Q	702	87-A30-240-080	TR, CSA1585BC	ABC.....
Q	703	87-A30-241-080	TR, KTA1272Y	ABC.....
Q	704	87-A30-241-080	TR, KTA1272Y	ABC.....
S	201	87-A90-535-010	SW, RTRY EC16B24304	ABC.....
S	202	87-A90-791-010	SW, RTRY EC16B12204	ENCODER
S	304	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	306	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	307	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	303	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	308	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	305	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	301	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	302	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	309	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	310	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	317	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	318	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	314	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	312	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	316	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	319	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	321	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	325	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	320	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	329	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	323	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	322	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	324	87-A90-095-080	SW, TACT EV011G04M	ABC.....
S	330	87-A90-095-080	SW, TACT EV011G04M	ABC.....
C	402	87-010-112-040	CAP, E 100-16	.....
C	409	87-010-265-040	CAP, E 33-16 SME	.....
C	405	87-010-544-040	CAP, E 0.1-50 SME	.....
C	407	87-015-699-040	CAP, E 10-50 7L	.....
C	404	87-018-117-080	CAP, TC-U 68P-50 SL	.....
C	408	87-018-118-080	CAP, TC-U 82P-50 B	.....
C	406	87-A11-144-080	CAP, TC U 0.1-50 K B	.....
C	403	87-A11-149-080	CAP, TC U 0.22-50 Z F	.....
C	401	87-A11-154-080	CAP, TC U 4700P-16 Z F	.....
C	410	87-A11-140-080	CAP, TC U 0.047-50 K B	.....
EMI	401	87-008-372-080	FILTER, EMI BL OIRNI	.....
J	401	87-A60-651-010	JACK, 3.5MONO	.....
Q	404	87-026-609-080	TR, KTA1266GR	.....
Q	402	87-026-609-080	TR, KTA1266GR	.....
Q	403	87-026-610-080	TR, KTC3198GR	.....
Q	401	87-026-610-080	TR, KTC3198GR	.....
Q	406	87-026-610-080	TR, KTC3198GR	.....
Q	405	87-A30-090-080	FET, 2SK2541	.....
VR	401	86-NFA-607-010	VR, RTRY 10K15AX1 1 V XV0121PVN	.....
FC	1	87-033-213-080	CLAMP, FUSE	..B.....
FC	2	87-033-213-080	CLAMP, FUSE	..B.....
PR	102	87-026-681-080	PROTECTOR, 5A 60V 491	A.....
PR	101	87-026-681-080	PROTECTOR, 5A 60V 491	A.....
T	1	87-A60-317-010	TERMINAL, 1P MSC	..B.....
T	2	87-A60-317-010	TERMINAL, 1P MSC	..B.....
WH	101	87-A90-459-010	HLDR, WIRE 2.5-5P	AB.....
PR	5	87-026-681-080	PROTECTOR, 5A 60V 491	..C.....
PR	4	87-026-681-080	PROTECTOR, 5A 60V 491	..C.....
R	1	87-A00-261-080	RES, M/F 0.56-1W J	..C.....
R	2	87-A00-261-080	RES, M/F 0.56-1W J	..C.....
WH	101	87-A90-460-010	HLDR, WIRE 2.5-7P	..C.....
C	108	87-010-381-080	CAP, ELECT 330-16V	AB.....
C	107	87-010-384-080	CAP, ELECT 100-25V	AB.....
C	106	87-010-408-080	CAP, ELECT 47-50V	AB.....
C	109	87-010-917-090	CAP, E 3300-50 M SMG	.....
C	103	87-016-051-090	CAP, E 2200-35 SMG	AB.....
C	101	87-016-495-090	CAP, E 3300-25 SMG	.....
C	105	87-018-127-080	CAP, CER 470P-50V	AB.....
C	104	87-A10-011-090	CAP, E 2200-25 SMG	.....
C	101	87-A10-520-090	CAP, E 3300-35 M SMG	AB.....
C	102	87-A10-627-090	CAP, E 2200-50 M SMG	.....
C	111	87-010-247-080	CAP, ELECT 100-50V	.....
C	112	87-010-263-080	CAP, ELECT 100-10V	AB.....
C	110	87-010-263-080	CAP, ELECT 100-10V	..B.....
C	114	87-010-374-080	CAP, ELECT 47-10V	AB.....
C	113	87-010-403-080	CAP, ELECT 3.3-50V	AB.....
C	111	87-010-430-080	CAP, ELECT 100-63	AB.....
C	115	87-A11-007-080	CAP, M 0.047-50 J DE	AB.....
C	116	87-A11-007-080	CAP, M 0.047-50 J DE	AB.....

ELECTRICAL MAIN PARTS LIST - 3/8

C	122	87-010-384-080	CAP, ELECT 100-25V	.....
C	123	87-010-384-080	CAP, ELECT 100-25V	.....
C	123	87-010-408-080	CAP, ELECT 47-50V	AB.....
C	122	87-010-408-080	CAP, ELECT 47-50V	AB.....
C	152	87-010-385-080	CAP, ELECT 220-25V	.....
C	152	87-010-394-080	CAP, ELECT 220-35V	AB.....
C	152	87-010-409-080	CAP, E 220-50 SME	.....
D	108	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	109	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	107	87-A40-336-080	ZENER, MTZJ27D T-72	AB.....
D	113	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	116	87-070-274-080	DIODE, 1N4003 SEM	AB.....
D	117	87-070-274-080	DIODE, 1N4003 SEM	AB.....
D	110	87-A40-345-080	ZENER, MTZJ10C	AB.....
D	121	87-A40-455-080	DIODE, RL203 GW	AB.....
D	123	87-A40-455-080	DIODE, RL203 GW	AB.....
D	124	87-A40-455-080	DIODE, RL203 GW	AB.....
D	122	87-A40-455-080	DIODE, RL203 GW	AB.....
D	121	87-A40-535-080	DIODE, 1N5393-GOODARK	.....
D	122	87-A40-535-080	DIODE, 1N5393-GOODARK	.....
D	124	87-A40-535-080	DIODE, 1N5393-GOODARK	.....
D	123	87-A40-535-080	DIODE, 1N5393-GOODARK	.....
Q	105	87-026-609-080	TR, KTA1266GR	AB.....
Q	108	87-026-609-080	TR, KTA1266GR	AB.....
Q	102	87-026-610-080	TR, KTC3198GR	AB.....
Q	103	87-026-610-080	TR, KTC3198GR	AB.....
Q	109	87-026-610-080	TR, KTC3198GR	AB.....
Q	106	87-026-610-080	TR, KTC3198GR	AB.....
Q	107	87-026-610-080	TR, KTC3198GR	AB.....
Q	104	87-A30-196-080	TR, 2SC4115SRS	AB.....
Q	115	87-026-219-080	TR, DTA144ES (0.3W)	AB.....
Q	112	87-026-269-080	TR, DTA144ES	AB.....
Q	110	87-026-609-080	TR, KTA1266GR	AB.....
Q	113	87-026-609-080	TR, KTA1266GR	B.....
R	111	89-213-702-010	TR, 2SB1370 (1.8W)	AB.....
RY	124	87-A00-261-080	RES, M/F 0.56-1W J	B.....
W	101	87-A90-464-010	RELAY, DG12D2-0(M)	AB.....
H	101	83-NE2-618-110	F-CABEL 5P-2.5	AB.....
H	102	87-A90-459-010	HLDR, WIRE 2.5-5P	AB.....
C	108	87-010-381-080	CAP, ELECT 330-16V	..C.....
C	109	87-010-384-080	CAP, ELECT 100-25V	..C.....
C	107	87-010-384-080	CAP, ELECT 100-25V	..C.....
C	102	87-010-385-080	CAP, ELECT 220-25V	..C.....
C	106	87-010-408-080	CAP, ELECT 47-50V	..C.....
C	103	87-010-917-090	CAP, E 3300-50 M SMG	..C.....
C	101	87-016-495-090	CAP, E 3300-25 SMG	..C.....
C	105	87-018-127-080	CAP, CER 470P-50V	..C.....
C	104	87-A10-627-090	CAP, E 2200-50 M SMG	..C.....
C	111	87-010-247-080	CAP, ELECT 100-50V	..C.....
C	112	87-010-263-080	CAP, ELECT 100-10V	..C.....
C	114	87-010-374-080	CAP, ELECT 47-10V	..C.....
C	110	87-010-384-080	CAP, ELECT 100-25V	..C.....
C	113	87-010-403-080	CAP, ELECT 3.3-50V	..C.....
C	122	87-010-384-080	CAP, ELECT 100-25V	..C.....
C	123	87-010-384-080	CAP, ELECT 100-25V	..C.....
C	130	87-018-131-080	CAP, CER 1000P-50V	..C.....
D	108	87-020-465-080	DIODE, 1SS133 (110MA)	..C.....
D	109	87-020-465-080	DIODE, 1SS133 (110MA)	..C.....
D	101	87-070-274-080	DIODE, 1N4003 SEM	..C.....
D	104	87-070-274-080	DIODE, 1N4003 SEM	..C.....
D	102	87-070-274-080	DIODE, 1N4003 SEM	..C.....
D	103	87-070-274-080	DIODE, 1N4003 SEM	..C.....
D	106	87-070-274-080	DIODE, 1N4003 SEM	..C.....
D	105	87-070-274-080	DIODE, 1N4003 SEM	..C.....
D	107	87-A40-336-080	ZENER, MTZJ27D T-72	..C.....
D	112	87-020-465-080	DIODE, 1SS133 (110MA)	..C.....
D	111	87-020-465-080	DIODE, 1SS133 (110MA)	..C.....
D	117	87-070-274-080	DIODE, 1N4003 SEM	..C.....
D	116	87-070-274-080	DIODE, 1N4003 SEM	..C.....
D	115	87-A40-116-060	DIODE, RS403L-B-D-51	..C.....
D	110	87-A40-345-080	ZENER, MTZJ10C	..C.....
Q	105	87-026-609-080	TR, KTA1266GR	..C.....
Q	102	87-026-610-080	TR, KTC3198GR	..C.....
Q	104	87-A30-196-080	TR, 2SC4115SRS	..C.....
Q	108	87-A30-197-080	TR, KTA1267GR	..C.....
Q	109	87-A30-198-080	TR, KTC3199GR	..C.....
Q	106	87-A30-198-080	TR, KTC3199GR	..C.....
Q	107	87-A30-198-080	TR, KTC3199GR	..C.....
Q	103	87-A30-198-080	TR, KTC3199GR	..C.....
Q	115	87-026-219-080	TR, DTA144ES (0.3W)	..C.....
Q	110	87-A30-197-080	TR, KTA1267GR	..C.....
Q	111	89-213-702-010	TR, 2SB1370 (1.8W)	..C.....
RY	1	87-A90-464-010	RELAY, DG12D2-0(M)	..C.....
W	101	85-NF5-628-010	F-CABLE 7P-2.5	..C.....
H	102	87-A90-460-010	HLDR, WIRE 2.5-7P	..C.....
C	208	87-010-546-080	TAPPING SCREW, BVT2+3-10	AB.....
C	207	87-010-546-080	CAP, ELECT 0.33-50V	AB.....
C	209	87-A11-154-080	CAP, ELECT 0.33-50V	AB.....
C	214	87-010-260-080	CAP, TC U 4700P-16 Z F	AB.....
C	213	87-010-260-080	CAP, ELECT 47-25V	AB.....
C	212	87-010-403-080	CAP, ELECT 47-25V	AB.....
			CAP, ELECT 3.3-50V	AB.....

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C	211	87-010-403-080	CAP, ELECT 3.3-50V	AB.....
C	219	87-010-544-080	CAP, ELECT 0.1-50V	AB.....
C	217	87-A11-008-080	CAP, M 0.056-50 J DE	AB.....
C	218	87-A11-008-080	CAP, M 0.056-50 J DE	AB.....
C	210	87-A11-154-080	CAP, TC U 4700P-16 Z F	AB.....
C	220	87-010-544-080	CAP, ELECT 0.1-50V	AB.....
C	229	87-018-123-080	CAP, CER 220P-50V	AB.....
C	222	87-018-211-080	CAP, CER 0.01-50	.....
C	221	87-018-211-080	CAP, CER 0.01-50	.....
C	223	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	224	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	230	87-018-123-080	CAP, CER 220P-50V	AB.....
C	235	87-A11-148-080	CAP, TC U 0.1-50 Z F	AB.....
C	236	87-A11-148-080	CAP, TC U 0.1-50 Z F	AB.....
C	237	87-A11-155-080	CAP, TC U 0.01-16 Z F	AB.....
C	256	87-018-115-080	CAP, CER 47P-50V	.....
C	255	87-018-115-080	CAP, CER 47P-50V	.....
C	257	87-018-119-080	CAP, CER 100P-50V	.....
C	258	87-018-119-080	CAP, CER 100P-50V	.....
C	253	87-018-131-080	CAP, CER 1000P-50V	.....
C	254	87-018-131-080	CAP, CER 1000P-50V	.....
D	202	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	205	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	206	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	203	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	201	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	204	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	209	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	217	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	218	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	210	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	216	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	219	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	220	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	221	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
D	222	87-020-465-080	DIODE, 1SS133 (110MA)	AB.....
J	202	87-A60-238-010	TERMINAL, SP 4P (MSC)	AB.....
J	203	87-A60-425-010	JACK, PIN 2P YKC21-3838	.B.....
J	201	87-A60-602-010	JACK, DIA6.3 BLK ST W/SW TC	AB.....
L	202	87-003-383-010	COIL, 1UH-S	AB.....
L	201	87-003-383-010	COIL, 1UH-S	AB.....
Q	203	87-026-609-080	TR, KTA1266GR	AB.....
Q	202	87-026-609-080	TR, KTA1266GR	AB.....
Q	201	87-026-609-080	TR, KTA1266GR	AB.....
Q	204	87-026-609-080	TR, KTA1266GR	AB.....
Q	209	87-026-610-080	TR, KTC3198GR	AB.....
Q	205	87-026-610-080	TR, KTC3198GR	AB.....
Q	206	87-026-610-080	TR, KTC3198GR	AB.....
Q	208	87-026-610-080	TR, KTC3198GR	AB.....
Q	207	87-026-610-080	TR, KTC3198GR	AB.....
Q	218	87-026-609-080	TR, KTA1266GR	AB.....
Q	216	87-026-610-080	TR, KTC3198GR	.....
Q	210	87-026-610-080	TR, KTC3198GR	AB.....
Q	215	87-026-610-080	TR, KTC3198GR	.....
Q	215	87-A30-190-080	TR, CC5551	AB.....
Q	216	87-A30-190-080	TR, CC5551	AB.....
Q	213	87-A30-214-010	TR, 2SB1344	.....
Q	214	87-A30-214-010	TR, 2SB1344	.....
Q	211	87-A30-215-010	TR, 2SD2025	.....
Q	212	87-A30-215-010	TR, 2SD2025	.....
Q	213	87-A30-255-010	TR, 2SB1342	A.....
Q	214	87-A30-255-010	TR, 2SB1342	A.....
Q	212	87-A30-256-010	TR, 2SD1933	A.....
Q	211	87-A30-256-010	TR, 2SD1933	A.....
Q	232	87-A30-137-010	TR, 2SD2494	.B.....
Q	231	87-A30-137-010	TR, 2SD2494	.B.....
Q	234	87-A30-138-010	TR, 2SB1625	.B.....
Q	233	87-A30-138-010	TR, 2SB1625	.B.....
R	224	87-A00-258-080	RES, M/F 0.22-1W J	AB.....
R	223	87-A00-258-080	RES, M/F 0.22-1W J	AB.....
R	249	87-A00-258-080	RES, M/F 0.22-1W J	AB.....
R	250	87-A00-258-080	RES, M/F 0.22-1W J	AB.....
		87-067-703-010	TAPPING SCREW, BVT2+3-10	.C.....
C	207	87-010-546-080	CAP, ELECT 0.33-50V	.C.....
C	208	87-010-546-080	CAP, ELECT 0.33-50V	.C.....
C	209	87-A11-154-080	CAP, TC U 4700P-16 Z F	.C.....
C	211	87-010-403-080	CAP, ELECT 3.3-50V	.C.....
C	212	87-010-403-080	CAP, ELECT 3.3-50V	.C.....
C	219	87-010-544-080	CAP, ELECT 0.1-50V	.C.....
C	213	87-A10-899-080	CAP, E 47-25 M BP SME	.C.....
C	214	87-A10-899-080	CAP, E 47-25 M BP SME	.C.....
C	210	87-A11-154-080	CAP, TC U 4700P-16 Z F	.C.....
C	220	87-010-544-080	CAP, ELECT 0.1-50V	.C.....
C	229	87-018-123-080	CAP, CER 220P-50V	.C.....
C	230	87-018-123-080	CAP, CER 220P-50V	.C.....
C	236	87-A11-148-080	CAP, TC U 0.1-50 Z F	.C.....
C	235	87-A11-148-080	CAP, TC U 0.1-50 Z F	.C.....
C	237	87-A11-155-080	CAP, TC U 0.01-16 Z F	.C.....
D	205	87-020-465-080	DIODE, 1SS133 (110MA)	.C.....
D	201	87-020-465-080	DIODE, 1SS133 (110MA)	.C.....
D	206	87-020-465-080	DIODE, 1SS133 (110MA)	.C.....
D	203	87-020-465-080	DIODE, 1SS133 (110MA)	.C.....

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D	202	87-020-465-080	DIODE, 1SS133 (110MA)	..C
D	204	87-020-465-080	DIODE, 1SS133 (110MA)	..C
D	209	87-020-465-080	DIODE, 1SS133 (110MA)	..C
D	217	87-020-465-080	DIODE, 1SS133 (110MA)	..C
D	218	87-020-465-080	DIODE, 1SS133 (110MA)	..C
D	210	87-020-465-080	DIODE, 1SS133 (110MA)	..C
D	216	87-020-465-080	DIODE, 1SS133 (110MA)	..C
D	219	87-020-465-080	DIODE, 1SS133 (110MA)	..C
D	221	87-020-465-080	DIODE, 1SS133 (110MA)	..C
D	220	87-020-465-080	DIODE, 1SS133 (110MA)	..C
D	222	87-020-465-080	DIODE, 1SS133 (110MA)	..C
J	202	87-033-240-010	TERMINAL, SP 4P32SV1-05	..C
J	201	87-A60-602-010	JACK, DIA6.3 BLK ST W/SW TC	..C
L	202	87-003-383-010	COIL, 1UH-S	..C
L	201	87-003-383-010	COIL, 1UH-S	..C
Q	209	87-A30-190-080	TR, CC5551	..C
Q	202	87-A30-197-080	TR, KTA1267GR	..C
Q	203	87-A30-197-080	TR, KTA1267GR	..C
Q	204	87-A30-197-080	TR, KTA1267GR	..C
Q	201	87-A30-197-080	TR, KTA1267GR	..C
Q	207	87-A30-198-080	TR, KTC3199GR	..C
Q	206	87-A30-198-080	TR, KTC3199GR	..C
Q	208	87-A30-198-080	TR, KTC3199GR	..C
Q	205	87-A30-198-080	TR, KTC3199GR	..C
Q	210	87-A30-190-080	TR, CC5551	..C
Q	216	87-A30-190-080	TR, CC5551	..C
Q	215	87-A30-190-080	TR, CC5551	..C
Q	218	87-A30-197-080	TR, KTA1267GR	..C
Q	214	87-A30-214-010	TR, 2SB1344	..C
Q	213	87-A30-214-010	TR, 2SB1344	..C
Q	211	87-A30-215-010	TR, 2SD2025	..C
Q	212	87-A30-215-010	TR, 2SD2025	..C
R	223	87-A00-258-080	RES, M/F 0.22-1W J	..C
R	224	87-A00-258-080	RES, M/F 0.22-1W J	..C
R	249	87-A00-258-080	RES, M/F 0.22-1W J	..C
R	250	87-A00-258-080	RES, M/F 0.22-1W J	..C
C	308	87-010-263-080	CAP, ELECT 100-10V	AB
C	307	87-010-263-080	CAP, ELECT 100-10V	AB
C	309	87-018-115-080	CAP, CER 47P-50V	..
C	302	87-018-131-080	CAP, CER 1000P-50V	AB
C	301	87-018-131-080	CAP, CER 1000P-50V	AB
C	304	87-018-131-080	CAP, CER 1000P-50V	AB
C	303	87-018-131-080	CAP, CER 1000P-50V	AB
C	315	87-010-374-080	CAP, ELECT 47-10V	AB
C	318	87-010-546-080	CAP, ELECT 0.33-50V	AB
C	317	87-010-546-080	CAP, ELECT 0.33-50V	AB
C	310	87-018-115-080	CAP, CER 47P-50V	..
C	311	87-A11-009-080	CAP, M 0.068-50 J DE	AB
C	312	87-A11-009-080	CAP, M 0.068-50 J DE	AB
C	326	87-018-205-080	CAP, CERA-SOL 0.022	AB
C	361	87-010-374-080	CAP, ELECT 47-10V	AB
C	360	87-010-401-080	CAP, ELECT 1-50V	AB
C	399	87-018-127-080	CAP, CER 470P-50V	AB
C	401	87-010-544-080	CAP, ELECT 0.1-50V	AB
C	402	87-010-544-080	CAP, ELECT 0.1-50V	AB
C	403	87-018-118-080	CAP, TC-U 82P-50 B	AB
C	404	87-018-118-080	CAP, TC-U 82P-50 B	AB
C	412	87-010-405-080	CAP, ELECT 10-50V	AB
C	411	87-010-405-080	CAP, ELECT 10-50V	AB
C	452	87-010-382-080	CAP, ELECT 22-25V	AB
C	459	87-018-128-080	CAP, CERA-SOL SS 560P	AB
C	458	87-018-131-080	CAP, CER 1000P-50V	AB
C	457	87-A10-772-080	CAP, M 5600P-50 J	AB
C	461	87-018-126-080	CAP, TC-U 390P-50 B	AB
C	462	87-018-126-080	CAP, TC-U 390P-50 B	AB
CN	301	87-A60-620-010	CONN, 3P V 2MM JMT	AB
CN	351	87-A60-625-010	CONN, 8P V 2MM JMT	AB
D	401	87-020-465-080	DIODE, 1SS133 (110MA)	AB
IC	301	87-017-889-010	IC, NJM4558LD	AB
IC	401	87-017-889-010	IC, NJM4558LD	AB
L	451	87-007-342-010	COIL, OSC 85K BIAS	AB
Q	306	87-026-218-080	TR, DTC144ES (0.2W)	AB
Q	309	87-026-609-080	TR, KTA1266GR	AB
Q	303	87-A30-090-080	FET, 2SK2541	AB
Q	304	87-A30-090-080	FET, 2SK2541	AB
Q	301	87-A30-091-080	FET, 2SJ460	AB
Q	302	87-A30-091-080	FET, 2SJ460	AB
Q	305	87-A30-091-080	FET, 2SJ460	AB
Q	308	87-A30-091-080	FET, 2SJ460	AB
Q	307	87-A30-091-080	FET, 2SJ460	AB
Q	310	87-026-609-080	TR, KTA1266GR	AB
Q	444	87-026-609-080	TR, KTA1266GR	AB
Q	443	87-026-609-080	TR, KTA1266GR	AB
Q	454	87-026-610-080	TR, KTC3198GR	AB
Q	455	87-026-610-080	TR, KTC3198GR	..
Q	451	87-026-610-080	TR, KTC3198GR	AB
Q	453	87-026-610-080	TR, KTC3198GR	AB
SFR	451	87-024-355-080	SFR, 33K DIA6 H	AB
SFR	452	87-024-355-080	SFR, 33K DIA6 H	AB
C	307	87-010-263-080	CAP, ELECT 100-10V	..C
C	308	87-010-263-080	CAP, ELECT 100-10V	..C
C	304	87-018-131-080	CAP, CER 1000P-50V	..C

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C	303	87-018-131-080	CAP, CER 1000P-50V	..C
C	302	87-018-131-080	CAP, CER 1000P-50V	..C
C	301	87-018-131-080	CAP, CER 1000P-50V	..C
C	315	87-010-374-080	CAP, ELECT 47-10V	..C
C	317	87-010-546-080	CAP, ELECT 0.33-50V	..C
C	318	87-010-546-080	CAP, ELECT 0.33-50V	..C
C	361	87-010-374-080	CAP, ELECT 47-10V	..C
C	360	87-010-401-080	CAP, ELECT 1-50V	..C
C	399	87-018-127-080	CAP, CER 470P-50V	..C
C	401	87-010-544-080	CAP, ELECT 0.1-50V	..C
C	402	87-010-544-080	CAP, ELECT 0.1-50V	..C
C	403	87-018-118-080	CAP, TC-U 82P-50 B	..C
C	404	87-018-118-080	CAP, TC-U 82P-50 B	..C
C	412	87-010-405-080	CAP, ELECT 10-50V	..C
C	411	87-010-405-080	CAP, ELECT 10-50V	..C
C	452	87-010-382-080	CAP, ELECT 22-25V	..C
C	459	87-018-128-080	CAP, CERA-SOL SS 560P	..C
C	458	87-018-131-080	CAP, CER 1000P-50V	..C
C	462	87-018-126-080	CAP, TC-U 390P-50 B	..C
C	461	87-018-126-080	CAP, TC-U 390P-50 B	..C
CON	301	87-099-827-010	CONN, 3P S2M-3W	..C
CON	351	87-099-832-010	CONN, 8P S2M-8W	..C
D	401	87-020-465-080	DIODE, 1SS133 (110MA)	..C
IC	301	87-017-889-010	IC, NJM4558LD	..C
IC	401	87-017-889-010	IC, NJM4558LD	..C
L	451	87-007-342-010	COIL, OSC 85K BIAS	..C
Q	306	87-026-218-080	TR, DTC144ES (0.2W)	..C
Q	304	87-A30-090-080	FET, 2SK2541	..C
Q	303	87-A30-090-080	FET, 2SK2541	..C
Q	305	87-A30-091-080	FET, 2SJ460	..C
Q	307	87-A30-091-080	FET, 2SJ460	..C
Q	301	87-A30-091-080	FET, 2SJ460	..C
Q	302	87-A30-091-080	FET, 2SJ460	..C
Q	308	87-A30-091-080	FET, 2SJ460	..C
Q	309	87-A30-197-080	TR, KTA1267GR	..C
Q	310	87-A30-197-080	TR, KTA1267GR	..C
Q	442	87-A30-197-080	TR, KTA1267GR	..C
Q	443	87-A30-197-080	TR, KTA1267GR	..C
Q	453	87-026-610-080	TR, KTC3198GR	..C
Q	451	87-026-610-080	TR, KTC3198GR	..C
Q	454	87-026-610-080	TR, KTC3198GR	..C
SFR	452	87-A90-432-080	SFR, 30K H NVZ6TLTA	..C
SFR	451	87-A90-432-080	SFR, 30K H NVZ6TLTA	..C
C	601	87-018-195-080	CAP, CER 1200P-16V	AB
C	602	87-018-195-080	CAP, CER 1200P-16V	AB
C	617	87-010-260-080	CAP, ELECT 47-25V	AB
C	616	87-010-260-080	CAP, ELECT 47-25V	AB
C	611	87-010-545-080	CAP, ELECT 0.22-50V	AB
C	613	87-010-545-080	CAP, ELECT 0.22-50V	AB
C	614	87-010-545-080	CAP, ELECT 0.22-50V	AB
C	612	87-010-545-080	CAP, ELECT 0.22-50V	AB
C	615	87-018-104-080	CAP, TC-U 10P-50 SL	AB
CN	602	87-099-194-010	CONN, 6P 6216V	AB
CN	601	87-099-719-010	CONN, 30P TYK-B(X)	AB
D	601	87-A40-466-080	ZENER, MTZJ2.7A	AB
D	602	87-A40-466-080	ZENER, MTZJ2.7A	AB
FB	601	87-008-372-080	FILTER, EMI BL OIRNI	..
IC	601	87-A20-715-010	IC, M62439SP	AB
J	601	87-A60-425-010	JACK, PIN 2P YKC21-3838	AB
C	601	87-018-195-080	CAP, CER 1200P-16V	..C
C	602	87-018-195-080	CAP, CER 1200P-16V	..C
C	617	87-010-408-080	CAP, ELECT 47-50V	..C
C	616	87-010-408-080	CAP, ELECT 47-50V	..C
C	612	87-010-545-080	CAP, ELECT 0.22-50V	..C
C	611	87-010-545-080	CAP, ELECT 0.22-50V	..C
C	613	87-010-545-080	CAP, ELECT 0.22-50V	..C
C	614	87-010-545-080	CAP, ELECT 0.22-50V	..C
C	615	87-018-104-080	CAP, TC-U 10P-50 SL	..C
CON	602	87-099-194-010	CONN, 6P 6216V	..C
CON	601	87-099-719-010	CONN, 30P TYK-B(X)	..C
D	601	87-A40-466-080	ZENER, MTZJ2.7A	..C
D	602	87-A40-466-080	ZENER, MTZJ2.7A	..C
IC	601	87-A20-715-010	IC, M62439SP	..C
J	601	87-A60-425-010	JACK, PIN 2P YKC21-3838	..C
C	707	87-010-112-080	CAP, ELECT 100-16V	AB
C	709	87-010-248-080	CAP, ELECT 220-10V	AB
C	701	87-010-404-080	CAP, ELECT 4.7-50V	AB
C	706	87-018-131-080	CAP, CER 1000P-50V	AB
C	704	87-018-131-080	CAP, CER 1000P-50V	AB
C	705	87-018-131-080	CAP, CER 1000P-50V	AB
C	708	87-A11-144-080	CAP, TC U 0.1-50 K B	AB
C	702	87-A11-155-080	CAP, TC U 0.01-16 Z F	AB
C	703	87-A11-155-080	CAP, TC U 0.01-16 Z F	AB
C	710	87-010-112-080	CAP, ELECT 100-16V	AB
C	714	87-010-112-080	CAP, ELECT 100-16V	AB
C	715	87-018-119-080	CAP, CER 100P-50V	AB
C	713	87-018-149-080	CAP, TC-U 15P-50 CH	AB
C	712	87-018-149-080	CAP, TC-U 15P-50 CH	AB
D	701	87-017-931-080	ZENER, MTZJ5.6B	AB
D	702	87-020-465-080	DIODE, 1SS133 (110MA)	..
IC	701	87-070-127-110	IC, LC72131 D	AB
L	701	87-005-847-080	COIL, 2.2UH(CECS)	AB

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Q	701	87-A30-196-080	TR,2SC4115SRS	AB.....
X	701	87-A70-061-010	VIB,XTAL 4.500MHZ CSA-309	AB.....
C	707	87-010-112-080	CAP, ELECT 100-16V	..C.....
C	709	87-010-248-080	CAP, ELECT 220-10V	..C.....
C	701	87-010-404-080	CAP, ELECT 4.7-50V	..C.....
C	704	87-018-131-080	CAP, CER 1000P-50V	..C.....
C	705	87-018-131-080	CAP, CER 1000P-50V	..C.....
C	706	87-018-131-080	CAP, CER 1000P-50V	..C.....
C	702	87-A11-155-080	CAP, TC U 0.01-16 Z F	..C.....
C	703	87-A11-155-080	CAP, TC U 0.01-16 Z F	..C.....
C	714	87-010-112-080	CAP, ELECT 100-16V	..C.....
C	710	87-010-112-080	CAP, ELECT 100-16V	..C.....
C	715	87-018-119-080	CAP, CER 100P-50V	..C.....
C	713	87-018-149-080	CAP, TC-U 15P-50 CH	..C.....
C	712	87-018-149-080	CAP, TC-U 15P-50 CH	..C.....
D	701	87-A40-234-080	ZENER,MTZJ5.6A	..C.....
IC	701	87-070-127-110	IC,LC72131 D	..C.....
L	701	87-005-847-080	COIL,2.2UH(CECS)	..C.....
Q	701	87-A30-196-080	TR,2SC4115SRS	..C.....
X	701	87-A70-061-010	VIB,XTAL 4.500MHZ CSA-309	..C.....
C	746	87-A11-155-080	CAP, TC U 0.01-16 Z F	AB.....
C	758	87-010-112-080	CAP, ELECT 100-16V	AB.....
C	753	87-010-408-080	CAP, ELECT 47-50V	AB.....
C	752	87-018-143-080	CAP, TC-U 4.7P-50 CH	..C.....
C	755	87-A11-144-080	CAP, TC U 0.1-50 K B	AB.....
C	757	87-A11-155-080	CAP, TC U 0.01-16 Z F	AB.....
C	759	87-A11-155-080	CAP, TC U 0.01-16 Z F	AB.....
C	756	87-A11-155-080	CAP, TC U 0.01-16 Z F	AB.....
C	762	87-010-400-080	CAP, ELECT 0.47-50V	AB.....
C	763	87-010-401-080	CAP, ELECT 1-50V	AB.....
C	764	87-010-401-080	CAP, ELECT 1-50V	AB.....
C	769	87-010-403-080	CAP, ELECT 3.3-50V	AB.....
C	761	87-010-404-080	CAP, ELECT 4.7-50V	AB.....
C	766	87-010-407-080	CAP, ELECT 33-50V	AB.....
C	765	87-018-115-080	CAP, CER 47P-50V	AB.....
C	768	87-A11-147-080	CAP, TC U 0.047-50 Z F	AB.....
C	774	87-010-405-080	CAP, ELECT 10-50V	AB.....
C	771	87-010-406-080	CAP, ELECT 22-50	AB.....
C	773	87-018-131-080	CAP, CER 1000P-50V	AB.....
C	773	87-018-195-080	CAP, CER 1200P-16V	..C.....
C	773	87-018-196-080	CAP, CER 1500P-16V	..C.....
C	776	87-A11-155-080	CAP, TC U 0.01-16 Z F	AB.....
C	770	87-A11-155-080	CAP, TC U 0.01-16 Z F	AB.....
C	789	87-010-403-080	CAP, ELECT 3.3-50V	AB.....
C	786	87-010-405-080	CAP, ELECT 10-50V	AB.....
C	785	87-010-405-080	CAP, ELECT 10-50V	AB.....
C	787	87-018-196-080	CAP, CER 1500P-16V	..C.....
C	788	87-018-196-080	CAP, CER 1500P-16V	..C.....
C	784	87-018-199-080	CAP, CER 3300P	AB.....
C	783	87-018-199-080	CAP, CER 3300P	AB.....
C	784	87-018-202-080	CAP, CERAM.6800PF	..C.....
C	783	87-018-202-080	CAP, CERAM.6800PF	..C.....
C	788	87-A11-153-080	CAP, TC U 2200P-16 Z F	AB.....
C	787	87-A11-153-080	CAP, TC U 2200P-16 Z F	AB.....
C	790	87-010-403-080	CAP, ELECT 3.3-50V	AB.....
D	752	87-020-465-080	DIODE,1SS133 (110MA)	..C.....
D	751	87-020-465-080	DIODE,1SS133 (110MA)	AB.....
IC	751	87-A20-913-010	IC,LA1837NL	AB.....
L	771	87-A50-266-010	COIL,FM DET-2N(TOK)	AB.....
L	772	87-A90-052-010	FLTR,CFMT-450A(TOK)	..C.....
L	772	87-A90-733-010	FLTR,PCFAZH-450 (TOK)	AB.....
X	751	87-030-354-010	VIB,CF BFU 450C	..C.....
C	746	87-A11-155-080	CAP, TC U 0.01-16 Z F	..C.....
C	758	87-010-112-080	CAP, ELECT 100-16V	..C.....
C	753	87-010-408-080	CAP, ELECT 47-50V	..C.....
C	756	87-A11-155-080	CAP, TC U 0.01-16 Z F	..C.....
C	759	87-A11-155-080	CAP, TC U 0.01-16 Z F	..C.....
C	757	87-A11-155-080	CAP, TC U 0.01-16 Z F	..C.....
C	762	87-010-400-080	CAP, ELECT 0.47-50V	..C.....
C	763	87-010-401-080	CAP, ELECT 1-50V	..C.....
C	764	87-010-401-080	CAP, ELECT 1-50V	..C.....
C	769	87-010-403-080	CAP, ELECT 3.3-50V	..C.....
C	761	87-010-404-080	CAP, ELECT 4.7-50V	..C.....
C	766	87-010-407-080	CAP, ELECT 33-50V	..C.....
C	765	87-018-115-080	CAP, CER 47P-50V	..C.....
C	768	87-A11-147-080	CAP, TC U 0.047-50 Z F	..C.....
C	774	87-010-405-080	CAP, ELECT 10-50V	..C.....
C	771	87-010-406-080	CAP, ELECT 22-50	..C.....
C	773	87-018-131-080	CAP, CER 1000P-50V	..C.....
C	770	87-A11-155-080	CAP, TC U 0.01-16 Z F	..C.....
C	789	87-010-403-080	CAP, ELECT 3.3-50V	..C.....
C	786	87-010-405-080	CAP, ELECT 10-50V	..C.....
C	785	87-010-405-080	CAP, ELECT 10-50V	..C.....
C	783	87-018-199-080	CAP, CER 3300P	..C.....
C	784	87-018-199-080	CAP, CER 3300P	..C.....
C	787	87-A11-153-080	CAP, TC U 2200P-16 Z F	..C.....
C	788	87-A11-153-080	CAP, TC U 2200P-16 Z F	..C.....
C	790	87-010-403-080	CAP, ELECT 3.3-50V	..C.....
D	751	87-020-465-080	DIODE,1SS133 (110MA)	..C.....
IC	751	87-A20-913-010	IC,LA1837NL	..C.....
L	771	87-A50-266-010	COIL,FM DET-2N(TOK)	..C.....
L	772	87-A90-733-010	FLTR,PCFAZH-450 (TOK)	..C.....

ELECTRICAL MAIN PARTS LIST - 8/8

C	856	87-010-405-080	CAP, ELECT 10-50V	.....
C	855	87-010-405-080	CAP, ELECT 10-50V	.....
C	859	87-018-109-080	CAP, CER 22P-50V	.....
C	858	87-018-109-080	CAP, CER 22P-50V	.....
C	851	87-018-123-080	CAP, CER 220P-50V	.....
C	852	87-018-123-080	CAP, CER 220P-50V	.....
C	853	87-018-127-080	CAP, CER 470P-50V	.....
C	854	87-A11-144-080	CAP, TC U 0.1-50 K B	.....
C	857	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	860	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
IC	851	87-A20-502-010	IC, BU1920	.....
L	851	87-005-847-080	COIL, 2.2UH(CECS)	.....
Q	851	87-026-610-080	TR, KTC3198GR	.....
X	851	87-A70-091-010	VIB, XTAL 4.332MHZ CSA-309	.....
C	805	87-A11-144-080	CAP, TC U 0.1-50 K B	AB.....
C	807	87-A11-144-080	CAP, TC U 0.1-50 K B	AB.....
C	808	87-A11-155-080	CAP, TC U 0.01-16 Z F	AB.....
C	809	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	802	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	803	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	801	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	804	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	812	87-010-408-080	CAP, ELECT 47-50V	.....
C	813	87-018-131-080	CAP, CER 1000P-50V	AB.....
C	810	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	811	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	901	87-A11-148-080	CAP, TC U 0.1-50 Z F	AB.....
C	924	87-014-049-080	CAP, PP 470P-100 J	.....
C	922	87-018-099-080	CAP, CERA 3.9P-50	.....
C	923	87-018-102-080	CAP, TC-U 6.8P-50 SL	.....
C	921	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	931	87-010-263-080	CAP, ELECT 100-10V	.....
C	932	87-010-400-080	CAP, ELECT 0.47-50V	.....
C	939	87-014-073-080	CAP, PP 4700P-100 J	.....
C	938	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	935	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	936	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	934	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	937	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
C	940	87-014-051-080	CAPACITOR (PP) 560P	.....
C	944	87-018-104-080	CAP, TC-U 10P-50 SL	AB.....
C	941	87-018-109-080	CAP, CER 22P-50V	.....
C	943	87-A11-144-080	CAP, TC U 0.1-50 K B	AB.....
CF	802	82-785-747-010	CF MS2 GHY R	.....
CF	801	87-008-261-010	FILTER, SFE10.7MA5-A	AB.....
CF	801	87-008-423-010	CERAMIC FILTER, SFE10.7	.....
D	923	87-020-465-080	DIODE, 1SS133 (110MA)	.....
D	921	87-020-465-080	DIODE, 1SS133 (110MA)	.....
D	922	87-020-465-080	DIODE, 1SS133 (110MA)	.....
D	941	87-020-465-080	DIODE, 1SS133 (110MA)	.....
FFE	801	A8-6ZA-19C-170	6ZA-1 YFEENC	.....
FFE	801	A8-8ZA-190-030	8ZA-1 FEUNM	AB.....
FFE	801	A8-8ZA-191-030	8ZA-1 YFEUNM	.....
J	801	87-A60-202-010	TERMINAL, ANT 4P MSP-154V-02	AB.....
J	802	87-A60-403-010	TERMINAL, ANT PAL 2P HSP-312V05	.....
J	931	81-754-629-010	CONNECTOR, 2P	.....
L	801	87-005-847-080	COIL, 2.2UH(CECS)	AB.....
L	934	87-005-372-080	COIL S 1MHM	.....
L	933	87-A50-159-010	COIL, 10MH K C2B	.....
L	942	87-A50-019-010	COIL, OSC LW(COI)	.....
L	941	87-A50-020-010	COIL, ANT LW(COI)	.....
L	941	87-A50-022-010	COIL, ANT SW(COI)	.....
L	942	87-A50-173-010	COIL, OSC SW-N(COI)	.....
L	981	87-NF4-650-010	COIL, AM PACK 4N(TOK)	AB.....
L	981	87-NF4-651-110	COIL, AM PACK2N(TOM)	.....
L	981	88-NF8-625-010	COIL, AM PACK3N(TOK)	.....
Q	801	87-026-214-080	TR, DTA114YS (0.3W)	AB.....
Q	802	87-026-214-080	TR, DTA114YS (0.3W)	.....
Q	803	89-305-352-380	TR, 2SC535(B/C)	.....
Q	941	87-026-269-080	TR, DTA114ES	.....
Q	940	87-026-269-080	TR, DTA114ES	.....
Q	942	87-A30-164-080	TR, CSC2001K	.....
TC	941	87-011-220-080	TRIMMER CAP 20P VTC	.....
TC	943	87-011-221-080	CAP, TRIMMER 30P	.....
TC	942	87-011-221-080	CAP, TRIMMER 30P	.....
C	808	87-A11-155-080	CAP, TC U 0.01-16 Z F	C.....
C	804	87-A11-155-080	CAP, TC U 0.01-16 Z F	C.....
C	803	87-A11-155-080	CAP, TC U 0.01-16 Z F	C.....
C	813	87-018-131-080	CAP, CER 1000P-50V	C.....
C	944	87-018-147-080	CAP, TC-U 10P-50 CH	C.....
CF	801	87-008-261-010	FILTER, SFE10.7MA5-A	C.....
FFE	801	A8-8ZA-190-030	8ZA-1 FEUNM	C.....
J	801	87-A60-202-010	TERMINAL, ANT 4P MSP-154V-02	C.....
L	801	87-005-847-080	COIL, 2.2UH(CECS)	C.....
L	981	87-NF4-650-010	COIL, AM PACK 4N(TOK)	C.....
Q	801	87-026-214-080	TR, DTA114YS (0.3W)	C.....
FC	101	87-033-147-010	FUSE CLAMP	A.C.....
FC	102	87-033-147-010	FUSE CLAMP	A.C.....
SW	101	87-A90-165-010	SW, SL 1-2-3 SWS2301	A.C.....
T	101	87-A60-317-010	TERMINAL, 1P MSC	A.C.....
T	102	87-A60-317-010	TERMINAL, 1P MSC	A.C.....

MECHANICAL PARTS LIST - 1/1

NOTE: The characters in the suffix column indicate the part usage.

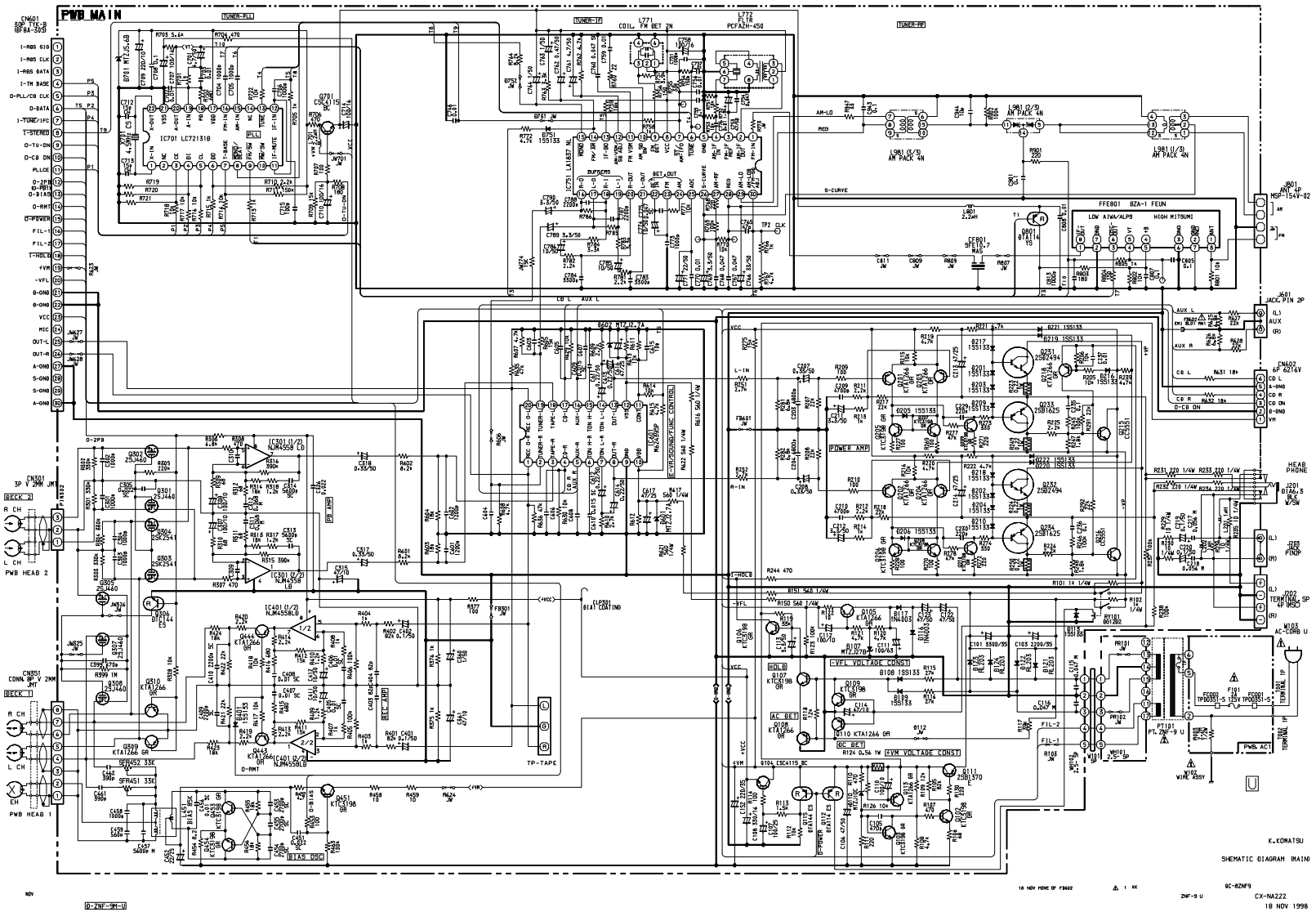
LH(Lo)	.....	XX	.....	A
U	.....	XX	.....	B
LH(Hi)	.....	XX	.....	C
REF.NO	PARTS NO.	kanri NO.	DESCRIPTION	SUFFIX
	82-NE6-067-010		BADGE, AIWA 30N	ABC.....
	8Z-NF9-002-010		PANEL, TRAY H	ABC.....
	8Z-NF9-003-010		BOX, CASS 1 1WAY	ABC.....
	8Z-NF9-004-010		BOX, CASS 2	ABC.....
	8Z-NF9-021-010		CABI, REAR USTM	B.....
	8Z-NF9-022-010		CABI, REAR LHSTM	A.....
	8Z-NF9-028-010		CABI, REAR LHSTM S333	..C.....
	8Z-NF9-029-010		CABI, REAR EZSTE S333	.....
	8Z-NF9-030-010		CABI, REAR HRJSTM S333	.....
	8Z-NF9-031-010		CABI, FR U	ABC.....
	8Z-NF9-032-010		BOX, CASS 1R	.....
	8Z-NF9-042-010		PANEL, TOP V-2	ABC.....
	8Z-NF9-043-010		PANEL, RIGHT S V-2	ABC.....
	8Z-NF9-065-010		CABI, REAR USTM	.....
	8Z-NF9-066-010		CABI, REAR LHSTM	.....
	8Z-NF9-067-010		CABI, REAR USTFD	.....
	8Z-NF9-068-010		CABI, REAR EZSTE S223	.....
	8Z-NF9-069-010		CABI, REAR EZSTE	.....
	8Z-NF9-070-010		CABI, REAR KSTE	.....
	88-NF9-056-010		KNOB, RTRY MIC	.....
	8Z-NF9-009-010		KNOB, RTRY VOL	ABC.....
	8Z-NF9-010-010		KNOB, RTRY JOG	ABC.....
	8Z-NF9-012-010		KEY, FUN	ABC.....
	8Z-NF9-013-010		KEY, ASSY OPE 1W	ABC.....
	8Z-NF9-016-010		KEY, CD	ABC.....
	8Z-NF9-017-010		KEY, GEO	ABC.....
	8Z-NF9-033-010		KEY, ASSY OPE R	.....
	8Z-NF9-034-010		KEY, OPE R	.....
	8Z-NF9-035-010		REFLECTOR, OPE R	.....
	86-NFZ-001-010		WINDOW, TOP	ABC.....
	8Z-NF9-005-010		WINDOW, CD	ABC.....
	8Z-NF9-006-010		WINDOW, DISP H	A.....
	8Z-NF9-007-010		WINDOW, CASS 1	ABC.....
	8Z-NF9-008-010		WINDOW, CASS 2	ABC.....
	8Z-NF9-039-010		WINDOW, DISP U	B.....
	8Z-NF9-062-010		WINDOW, DISP H S333	..C.....
	84-ZG1-245-210		CAP, OPTICAL	ABC.....
	82-NF5-218-010		SPR-T, EJECT 1 (SIN)	ABC.....
	82-NF5-219-010		SPR-T, EJECT 2 (SIN)	ABC.....
	82-NF5-229-010		PLATE, LOCK	ABC.....
	86-NF9-224-010		SPR-C, LOCK	ABC.....
	87-NF4-216-010		HLDR, LOCK 1	ABC.....
	87-NF4-217-010		HLDR, LOCK 2	ABC.....
	87-NF4-221-010		HLDR, CABLE	ABC.....
	87-NF8-220-010		DMPR, 150	ABC.....
	88-NF5-208-010		HLDR, PWB-M N	ABC.....
	8Z-NB8-240-010		COVER, PL	ABC.....
	87-067-641-010		UTT2+3-8(W/O SLOT)BL	ABC.....
	87-067-688-010		BVTI+3-6	ABC.....
	87-067-703-010		TAPPING SCREW, BVT2+3-10	ABC.....
	87-067-975-010		S-SCREW, IT+4-8	ABC.....
	87-721-097-410		QT2+3-12 GLD	ABC.....
	87-723-096-410		QT2+3-10W/O SLOT BL	ABC.....
	87-NF4-224-010		S-SCREW, IT3B+3-8 CU	ABC.....
	87-050-034-010		AC CORD ASSY, E	.....
	87-050-079-010		AC-CORD ASSY, E	A.C.....
	87-085-185-010		BUSHING, AC CORD (E)	A.C.....
	87-085-189-010		BUSHING, CORD (U)	B.....
	87-099-811-010		PLUG, ADPTR CONV(K)	.....
	87-A80-110-010		AC CORD ASSY, U SPT-2W	B.....
	88-906-251-110		FF-CABLE, 6P 1.25	ABC.....
	88-911-201-110		FF-CABLE, 11P 1.25	ABC.....
	88-913-221-110		FF-CABLE, 13P 1.25 220MM	ABC.....
C	814	87-A11-155-080	CAP, TC U 0.01-16 Z F	.....
F	101	87-035-139-010	FUSE, 2.5A T 250V	..C.....
F	101	87-035-219-010	FUSE, 500MA T	.....
F	101	87-035-222-010	FUSE, 1AT	.....
F	101	87-035-224-010	FUSE, 1.6AT	A.....
F	101	87-035-485-010	FUSE, 2A 125V D UL	B.....
PT	101	88-NF8-605-010	PT, 8NF-8LH	..C.....
PT	101	88-NF9-608-010	PT, 8NF9-EKZ	.....
PT	101	88-NF9-610-010	PT, 8NF-9 HI-HR	.....
PT	101	88-NF9-611-010	PT, 8NF-9 HI-LH	A.....
PT	101	8Z-NF9-620-010	PT, ZNF-9 U	B.....
PT	101	8Z-NF9-622-010	PT, ZNF-9 EZ-HI	.....
		82-NF7-210-110	GUIDE, FL (*)	ABC.....
WH	101	87-A90-459-010	HLDR, WIRE 2.5-5P	AB.....
WH	101	87-A90-460-010	HLDR, WIRE 2.5-7P	..C.....
W	101	83-NE2-618-110	F-CABEL, 5P-2.5	AB.....
WH	102	87-A90-459-010	HLDR, WIRE 2.5-5P	AB.....
W	101	85-NF5-628-010	F-CABLE 7P-2.5	..C.....
WH	102	87-A90-460-010	HLDR, WIRE 2.5-7P	..C.....
		87-067-703-010	TAPPING SCREW, BVT2+3-10	AB.....
		87-067-703-010	TAPPING SCREW, BVT2+3-10	..C.....

ACCESSORIES / PACKAGE LIST - 1/1

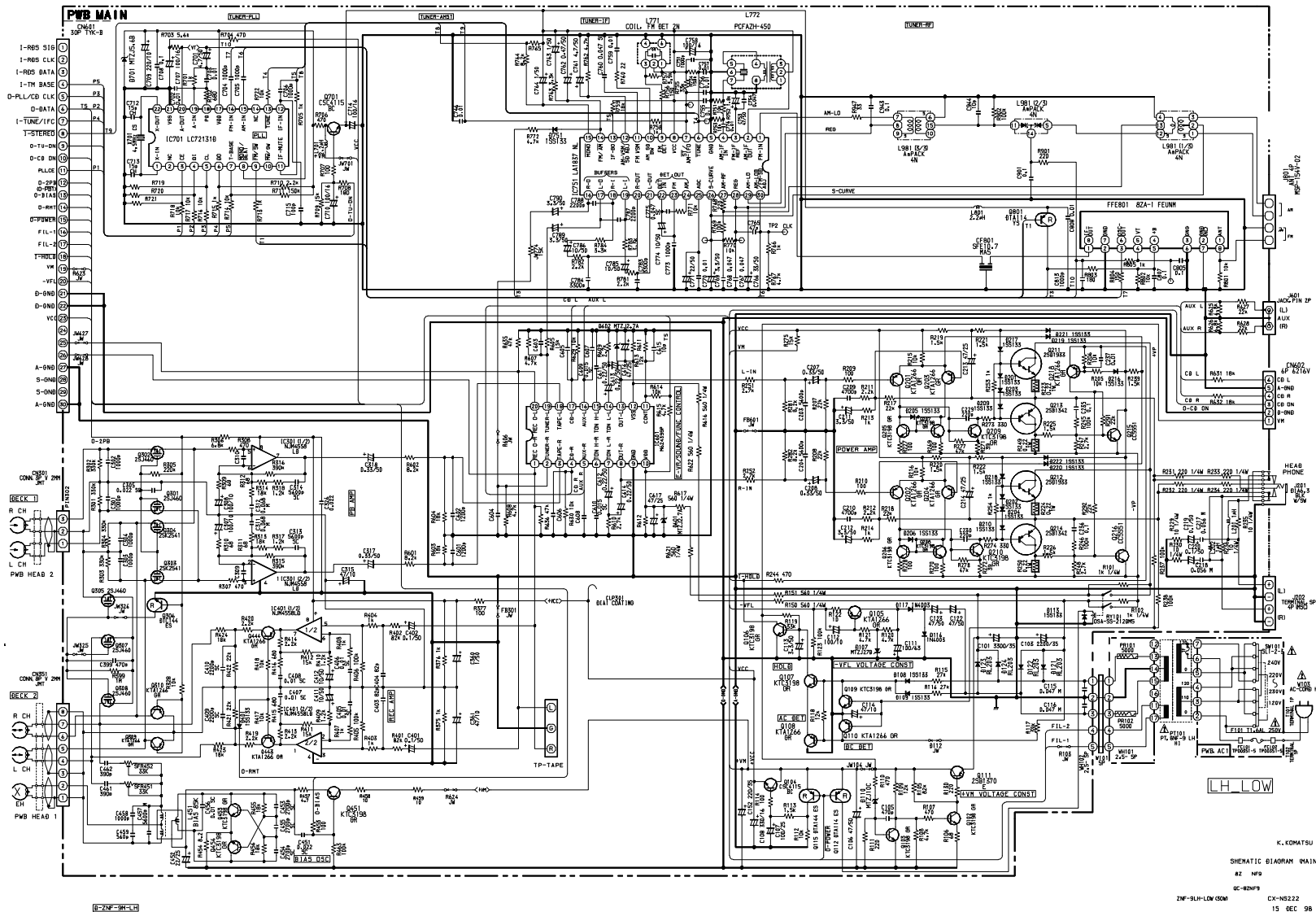
NOTE: The characters in the suffix column indicate the part usage.

REF.NO	PARTS NO.	KANRI NO.	DESCRIPTION	SUFFIX
	8Z-NF9-902-010		IB, LH(ESP)M	A.....
	8Z-NF9-903-010		IB, U(ESF)M	.B.....
	8Z-NF9-905-010		IB, K(E)E	.....
	8Z-NF9-906-010		IB, EZ(9L)E	.....
	8Z-NF9-912-010		IB, LH(ESP)M -333	..C.....
	8Z-NF9-916-010		IB, EZ(9L)E -223	.....
	8Z-NF9-926-010		IB, EZ(9L)E -333	.....
	87-006-268-010		AM-LOOP ANT NC (UN)	.....
	87-043-095-010		WIRE ANTENNA	.....
	87-043-106-010		WIRE, FM ANT (Z)	.....
	87-043-115-010		ANT, FEEDER FM	ABC.....
	87-A91-017-010		PLUG, CONVERSION JT-0476	A.C.....
	8Z-NF8-701-010		RC UNIT, RC-ZAS01	.....
	8Z-NF9-701-010		RC UNIT, ZAS02	ABC.....
ANT 0	87-006-225-010		AM LOOP ANT NC2	ABC.....
ANT 0	87-006-269-010		AM LOOP ANT (UN)	.....

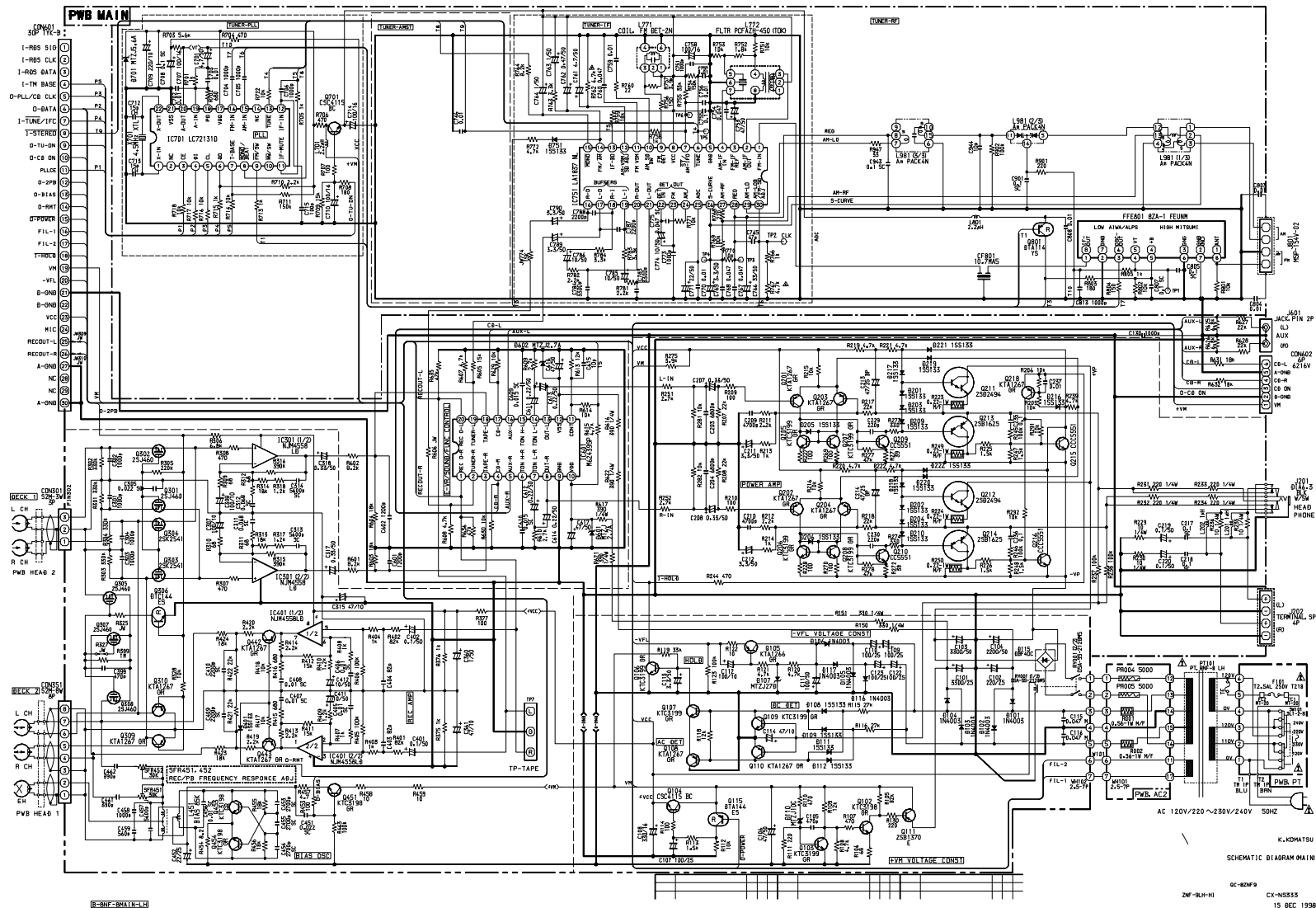
SCHEMATIC DIAGRAM - 1 (MAIN : U)



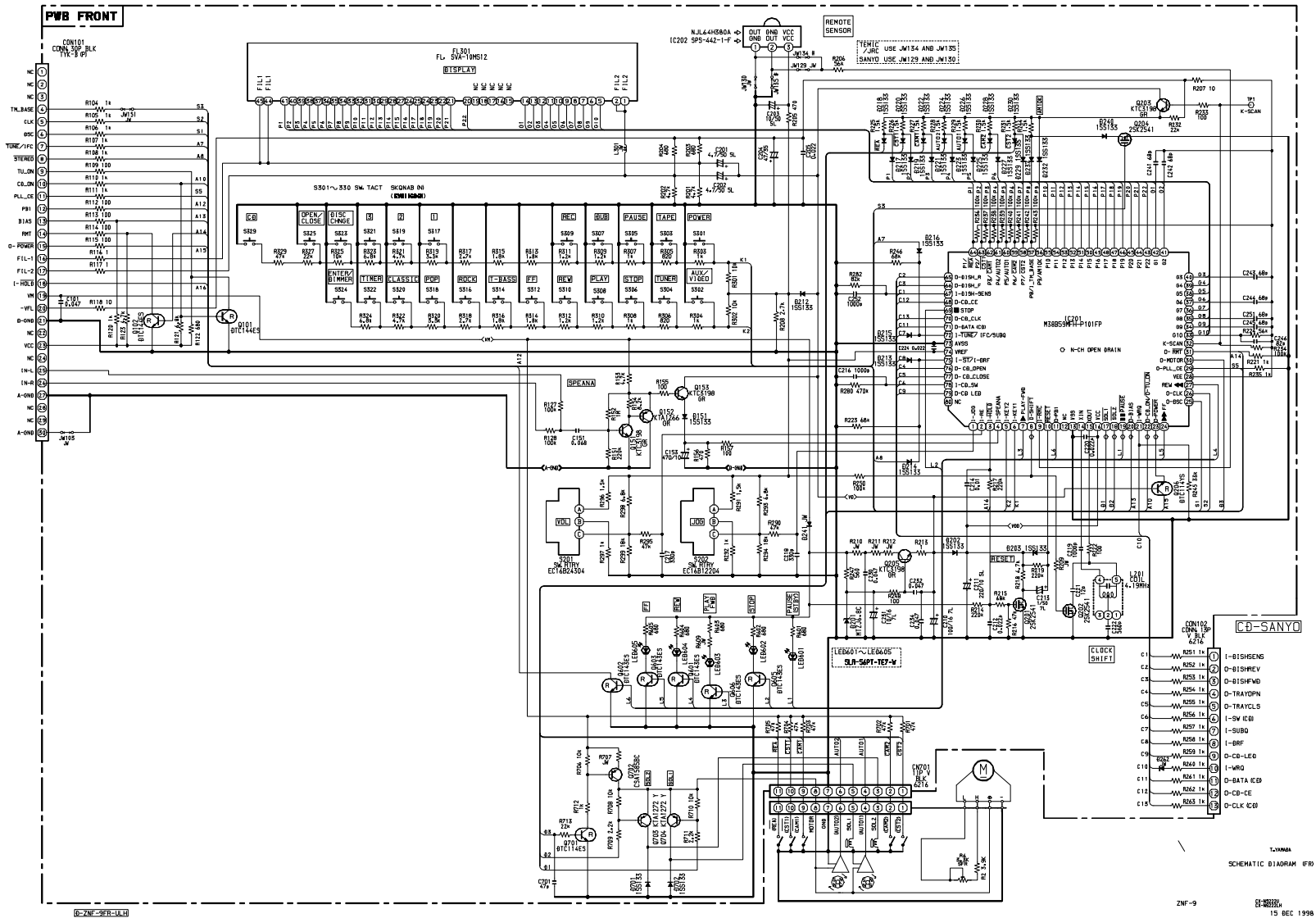
SCHEMATIC DIAGRAM – 1 (MAIN : 2LH)



SCHEMATIC DIAGRAM – 1 (MAIN : 3LH)



SCHEMATIC DIAGRAM – 1 (FRONT : U,2LH,3LH)



サービス技術ニュース	
番号	連絡内容
Gー	ー
Gー	ー
Gー	ー

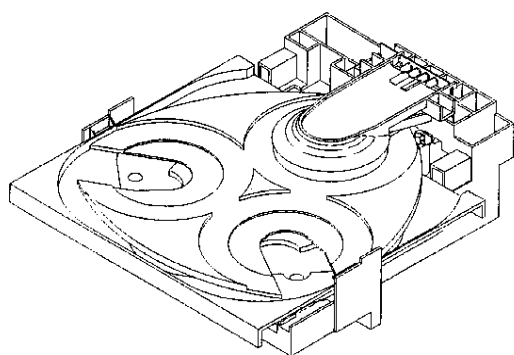
アイワ株式会社
AIWA CO.,LTD.

9301896

Tokyo Japan

aiwa

4ZG-1Z3 4ZG-1Z4

**CD MECHANISM**

• BASIC CD MECHANISM: 3ZG-2 E1
KSM-2131BAM
KSM-2131FAM

• TYPE: English

SUPPLEMENT

BASIC NAME	DERIVATION NAME							
	D	—	—	—	—	—	—	—
4ZG-1Z3	D	DL	SH	R	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	R	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

- This Service Manual has various derivation. Derivation name is indicated by the Service Manual for each model.
- This Service Manual contains information about the difference between 4ZG-1Z3/4ZG-1Z4. If requiring the other information, see Service Manual of 4ZG-1Z3/4ZG-1Z4 (S/M Code No.09-983-249-30T)

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM:

4ZG-1Z3 DSH
 SUFFIX
 (DERIVATION NAME)

BASIC NAME: 4ZG-1Z3 (THE 3rd SANYO IC MODEL)
 4ZG-1Z4 (THE 4th SANYO IC MODEL)

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	R	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	R	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

DERIVATION NAME

- D: Digital output function
- DL: Digital output function (CD WINDOW Flash function LOW END Type)
- MD: Digital output for Mini Disc
- SH: Pick up equipped with shutter
- R: Defference of tray

MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

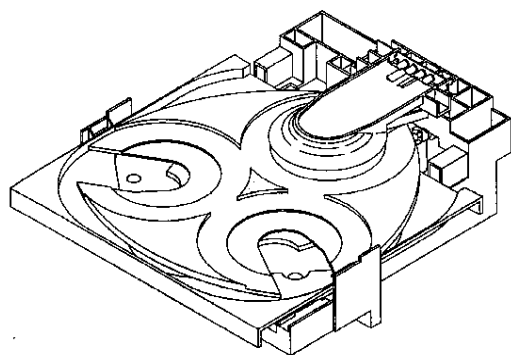
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZG1-239-210	0E	PULLY, WORM N
2	81-ZG1-212-010	0E	PULLY, LOAD MO
3	81-ZG1-239-010	0E	S-SCREW, TT
4	81-ZG1-291-110	0E	GEAR, TRAY RELAY NO3
5	81-ZG1-271-010	0E	S-SCREW MECH REAR
6	81-ZG1-277-310	1A	HLDR, MAGNET N
7	81-ZG1-255-110	0E	PLATE, MAGNET MK2
8	83-ZG3-213-010	0E	LVR, SW
9	84-ZG1-008-110	1H	TRAY, NO3
10	87-045-364-010	1F	MOTOR (BCH3B14)
11	84-ZG1-005-210	1H	TURNTABLE, NO1(*)
12	84-ZG1-011-010	1A	REFLECTOR, CD
13	84-ZG1-248-010	0E	SPR-C, WORM
14	84-ZG1-208-210	0E	LEVER, CAM
15	84-ZG1-209-010	0E	BELT, SQ1.8-117.7
16	84-ZG1-211-010	0E	SPR-E CAM S
17	84-ZG1-215-410	1B	GEAR, MAIN CAM BLU
18	84-ZG1-216-310	1A	SLIDE, MECHA CAM YEL
19	84-ZG1-205-110	1A	GEAR, TRAY
20	84-ZG1-206-110	0E	GEAR, RELAY

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
21	84-ZG1-207-010	0E	PULLEY, RELAY
22	84-ZG1-221-010	1B	GEAR, MAIN TT
23	84-ZG1-238-010	1A	GEAR, WORM N
24	84-ZG1-224-010	0E	LEVER, TT
25	84-ZG1-225-010	0E	BELT, SQ1.0-63.3
26	84-ZG1-268-010	0E	MAGNET, CLAMPER 97<24>
26	83-ZG3-602-010	1A	RING, MAG<Z3>
27	87-045-305-010	1F	MOTOR, RF-500TB DC-5V (2MA)
28	84-ZG1-259-010	0E	SPR-P, WORM
29	84-ZG1-244-310	1A	CABI, OPTICAL
30	84-ZG1-261-010	0E	LID, OPTICAL
A	87-067-703-010	0E	TAPPING SCREW, BVT2+3-10
B	87-251-070-410	0E	U+2.6-3
C	87-067-981-010	0E	BVT2+3-6 BLK

aiwa



4ZG-1Z3 4ZG-1Z4



CD MECHANISM

• BASIC CD MECHANISM: 3ZG-2 E1
KSM-2131BAM
KSM-2131FAM

• TYPE: English

RENEWAL MANUAL

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	—	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	—	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

- This Service Manual has various derivation. Derivation name is indicated by the Service Manual for each model.
- This Service Manual include modification parts both 09-983-249-3C1 and 09-983-249-30T(OLD).

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!

Laitteen Käyttäjän muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstråling, som kan 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

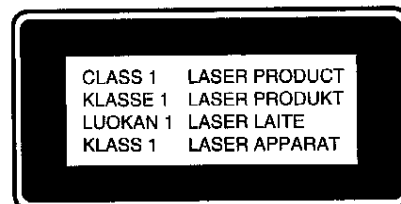
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

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.

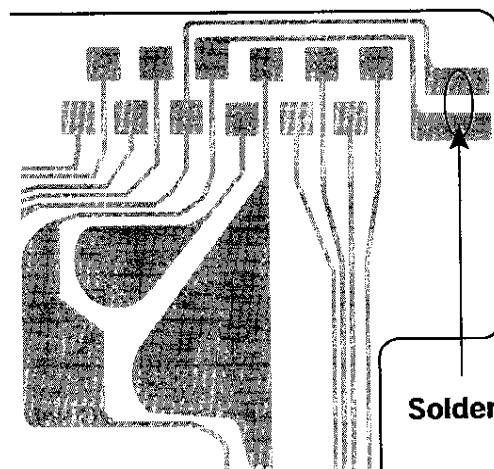


Precaution to replace Optical block (KSS-213B/213F)

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.

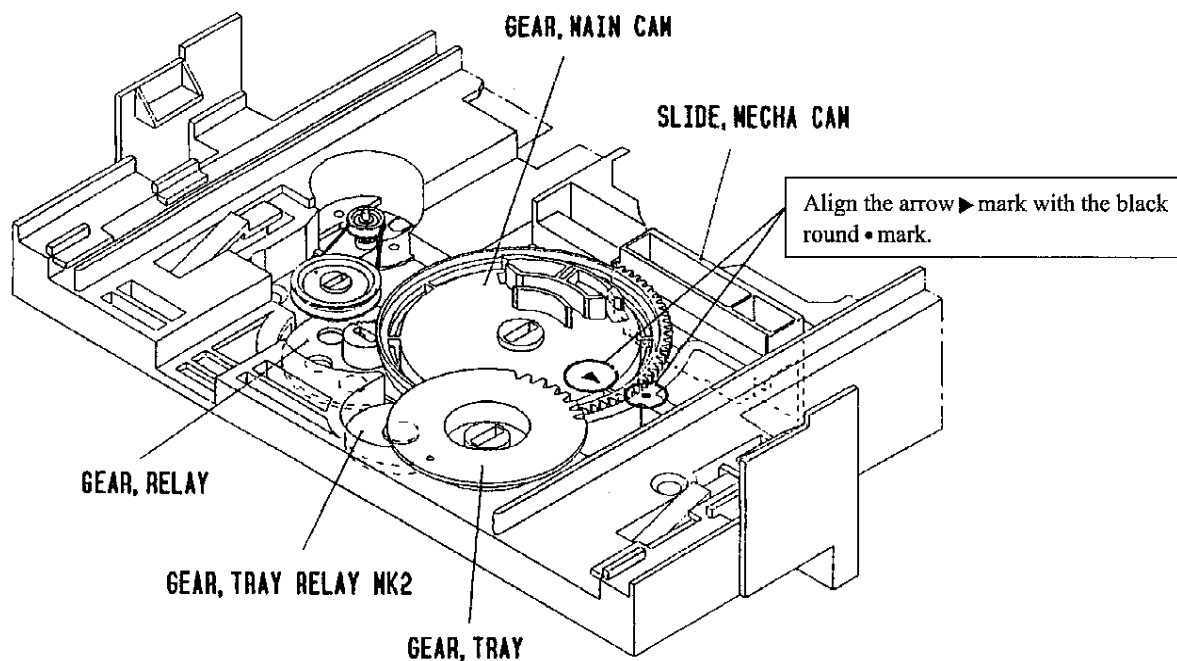
PICK-UP Assy P.W.B



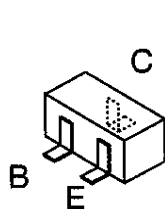
How to Adjust the Rotating Phase of the Gear, Main Cam

- 1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
- 2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
- 3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

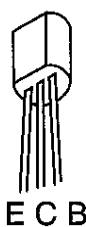
Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.



TRANSISTOR ILLUSTRATION



2SA1235
2SC3052
DTC144TK
RT1N141C



2SA1318
2SD655
KTA1266

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM:

4ZG-1Z3 DSH
 SUFFIX
 (DERIVATION NAME)

BASIC NAME: 4ZG-1Z3 (THE 3rd SANYO IC MODEL)
 4ZG-1Z4 (THE 4th SANYO IC MODEL)

BASIC NAME	DERIVATION NAME							
4ZG-1Z3	D	—	—	—	—	—	—	—
	D	DL	SH	—	—	—	—	—
4ZG-1Z4	D	DL	SH	MD	—	—	—	—

NOTE : 4ZG-1Z3 have the same BASIC NAME but use the different mechanisms.

DERIVATION NAME

- D: Digital output function
- DL: Digital output function (CD WINDOW Flash function LOW END Type)
- MD: Digital output for Mini Disc
- SH: Pick up equipped with shutter

MODEL NO. 42G-123 (D)

ELECTRICAL MAIN PARTS LIST

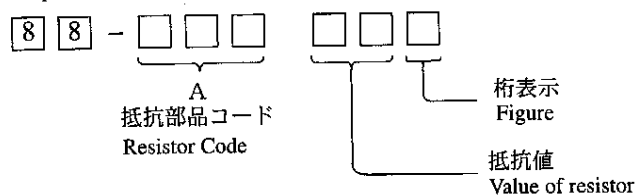
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC				C116	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
	87-A20-446-010	C-IC,LA9241ML		C117	87-010-263-040		CAP,E 100-10 M SME
	87-A20-459-010	C-IC,LC78622ED		C118	87-010-178-080		C-CAP,S 1000P-50 K B
	87-A20-445-010	IC,BA5936		C119	87-010-154-080		C-CAP,S 10P-50 D CH
				C120	87-018-209-080		CAP, CER 0.1-50V
TRANSISTOR				C121	87-010-403-080		CAP,E 3.3-50 M SME
	89-113-187-080	TR,2SA1318TU		C122	87-010-403-080		CAP,E 3.3-50 M SME
	87-026-295-080	C-TR,DTC144TK		C123	87-012-157-080		C-CAP,S 330P-50 J CH GRM
	87-A30-076-080	C-TR,2SC3052F		C124	87-012-157-080		C-CAP,S 330P-50 J CH GRM
	89-406-554-580	TR,2SD655DE		C131	87-010-382-080		CAP,E 22-25 M SME
	87-A30-073-080	C-TR,RT1N 141C		C191	87-010-263-040		CAP,E 100-10 M SME
				C301	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
	87-A30-075-080	C-TR,2SA1235F		C302	87-010-382-080		CAP,E 22-25 M SME
				C303	87-010-260-080		CAP,E 47-25 SME
				C501	87-010-381-080		CAP,E 1000-16 SMG
DIODE				C502	87-010-197-080		C-CAP,S 0.01-25 K B
	87-002-564-080	DIODE,1SS133-RA		C504	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
				C505	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
				C506	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
				C507	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
3CD C.B				C509	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
	84-ZG1-244-210	CABI,OPTICAL		C510	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C11	87-012-393-080	C-CAP,S 0.22-16 K W5R CM/CB		C603	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C12	87-012-157-080	C-CAP,S 330P-50 J CH GRM		C610	87-010-405-080		CAP,E 10-50 M SME
C13	87-016-369-080	C-CAP,S 0.033-25 K B		C611	87-010-405-080		CAP,E 10-50 M SME
C14	87-A10-201-080	C-CAP,S 0.33-16 K B		C701	87-010-405-080		CAP,E 10-50 M SME
C15	87-010-590-080	C-CAP,S 0.015-16 K R		C705	87-010-197-080		C-CAP,S 0.01-25 K B
C16	87-016-369-080	C-CAP,S 0.033-25 K B		C706	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C17	87-010-181-080	C-CAP,S 1800P-50 K B		C711	87-010-322-080		C-CAP,S 100P-50 J CH
C18	87-016-369-080	C-CAP,S 0.033-25 K B		C712	87-010-322-080		C-CAP,S 100P-50 J CH
C19	87-010-198-080	C-CAP,S 0.022-25 K B		C713	87-010-322-080		C-CAP,S 100P-50 J CH
C20	87-010-178-080	C-CAP,S 1000P-50 K B		C901	87-010-260-080		CAP,E 47-25 SME
C21	87-012-393-080	C-CAP,S 0.22-16 K W5R CM/CB		C902	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C22	87-016-083-080	C-CAP,S 0.15-16 K R		CON3	84-ZG1-648-010		CONN ASSY, 6P
C23	87-010-197-080	C-CAP,S 0.01-25 K B		FC1	85-NFT-611-110		FF-CABLE 16P-1.0
C24	87-010-186-080	C-CAP,S 4700P-50 K B		FC4	84-ZG1-614-210		F-CABLE,5P 1.25 210MM
C25	87-010-400-040	CAP,E 0.47-50 SME		L11	87-005-602-080		COIL,10UH J LAV35
C26	87-010-322-080	C-CAP,S 100P-50 J CH		L101	87-005-614-080		COIL,100UH
C27	87-010-382-040	CAP,E 22-25 SME		L102	87-005-602-080		COIL,10UH J LAV35
C28	87-010-403-040	CAP,E 3.3-50 SME		LED901	87-A40-123-010		LED,SLZ-8128A-01-B
C29	87-010-184-080	C-CAP,S 3300P-50 K B		M601	87-045-305-010		MOT,RF-500TB
C31	87-010-186-080	C-CAP,S 4700P-50 K B		SFR101	87-024-437-080		SFR100K,RH063EC
C32	87-010-152-080	C-CAP,S 8P		SW701	87-036-109-010		SW,MICRO SPPB61
C33	87-016-081-080	C-CAP,S 0.1-16 K R		SW702	87-036-109-010		SW,MICRO SPPB61
C35	87-010-196-080	C-CAP,S 0.1-25 Z F C2012		X101	87-A70-046-010		VIB,XTAL 16.934MHZ
C37	87-010-405-080	CAP,E 10-50 M SME		LED C.B			
C38	87-010-263-080	CAP,E 100-10 SME		LED701	87-A40-316-080		LED,SLR-56PCT31 GRN
C39	87-010-189-020	C-CAP,S 8200P-50 K B		LED702	87-A40-268-080		LED,SLH-56DCT31 ORN
C40	87-010-401-080	CAP,E 1-50 M SME		LED703	87-A40-268-080		LED,SLH-56DCT31 ORN
C41	87-016-081-080	C-CAP,S 0.1-16 RK		LED704	87-A40-316-080		LED,SLR-56PCT31 GRN
C42	87-010-263-080	CAP,E 100-10 SME		T-T C.B			
C43	87-010-197-080	C-CAP,S 0.01-25 K B		C401	87-018-214-080		CAP,TC U 0.1-50 Z F SA
C44	87-010-263-080	CAP,E 100-10 SME		M401	87-045-364-010		MOT,BCH3B
C46	87-010-196-080	C-CAP,S 0.1-25 Z F C2012		PS401	87-026-573-010		SNSR,PHOTO GP1S53
C47	87-010-260-080	CAP,E 47-25 SME		MOTOR C.B			
C48	87-010-196-080	C-CAP,S 0.1-25 Z F C2012		M2	9X-262-513-210		SLED MOTOR ASSY
C49	87-010-404-080	CAP,E 4.7-50 M SME		PIN3	91-564-722-110		CONNECTOR 6P
C50	87-010-197-080	C-CAP,S 0.01-25 K B		SW1	91-572-085-110		LEAF SW
C51	87-010-263-040	CAP,E 100-10 M SME					
C52	87-012-156-080	C-CAP,S 220P-50 J CH GRM					
C101	87-016-081-080	C-CAP,S 0.1-16 K R					
C102	87-016-081-080	C-CAP,S 0.1-16 K R					
C103	87-010-321-080	C-CAP,S 82P-50 J CH					
C104	87-012-154-080	C-CAP,S 150P-50 J CH GRM					
C105	87-010-196-080	C-CAP,S 0.1-25 Z F C2012					
C109	87-010-197-080	C-CAP,S 0.01-25 K B					
C111	87-010-312-080	C-CAP,S 15P					
C112	87-010-154-080	C-CAP,S 10P-50 D CH					
C113	87-010-322-080	C-CAP,S 100P-50 J CH					
C115	87-010-404-080	CAP,E 4.7-50 M SME					

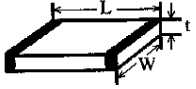
- Regarding connectors, they are not stocked as they are not the initial order items.
The connectors are available after they are supplied from connector manufacturers upon the order is received.

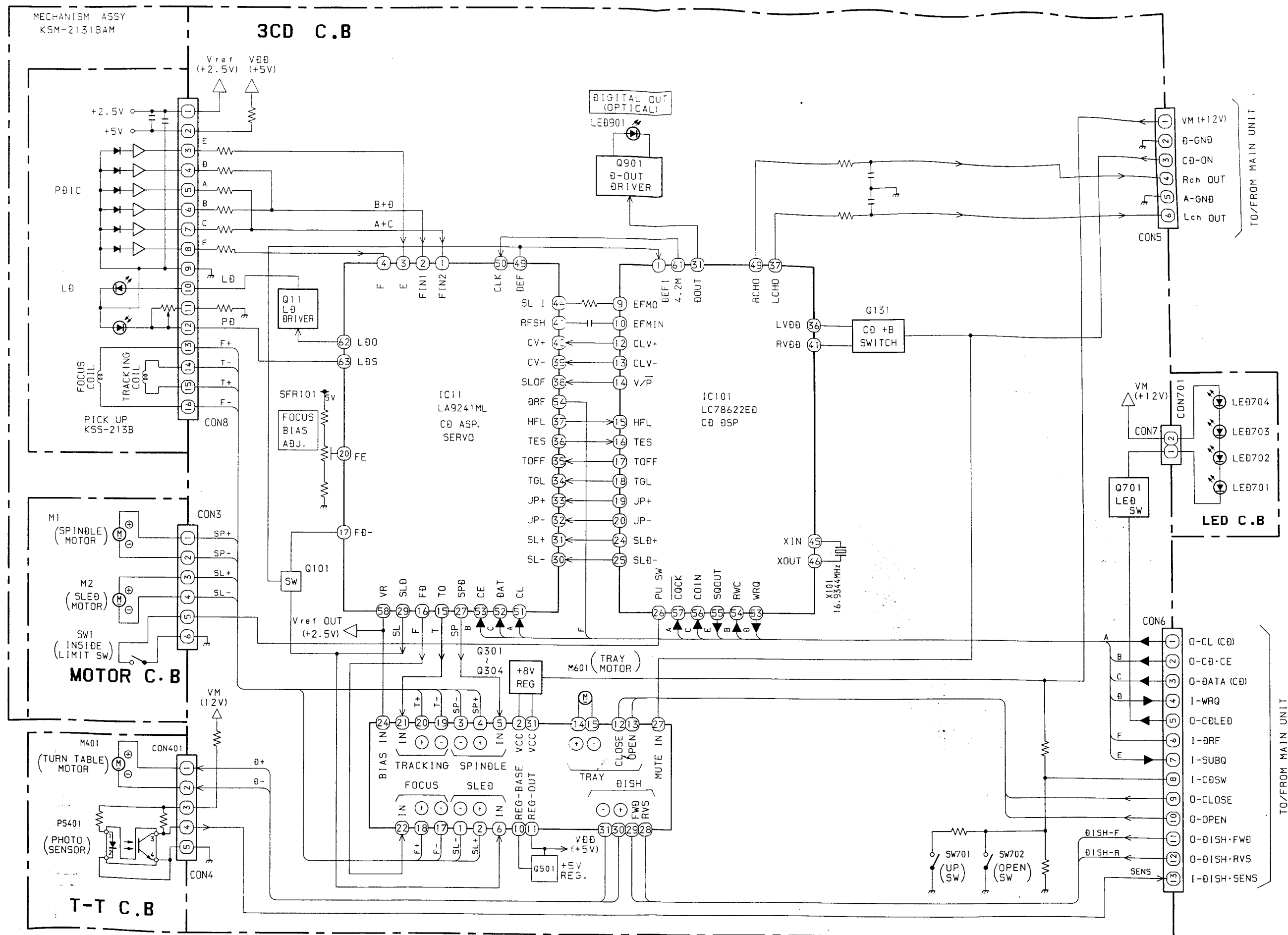
○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

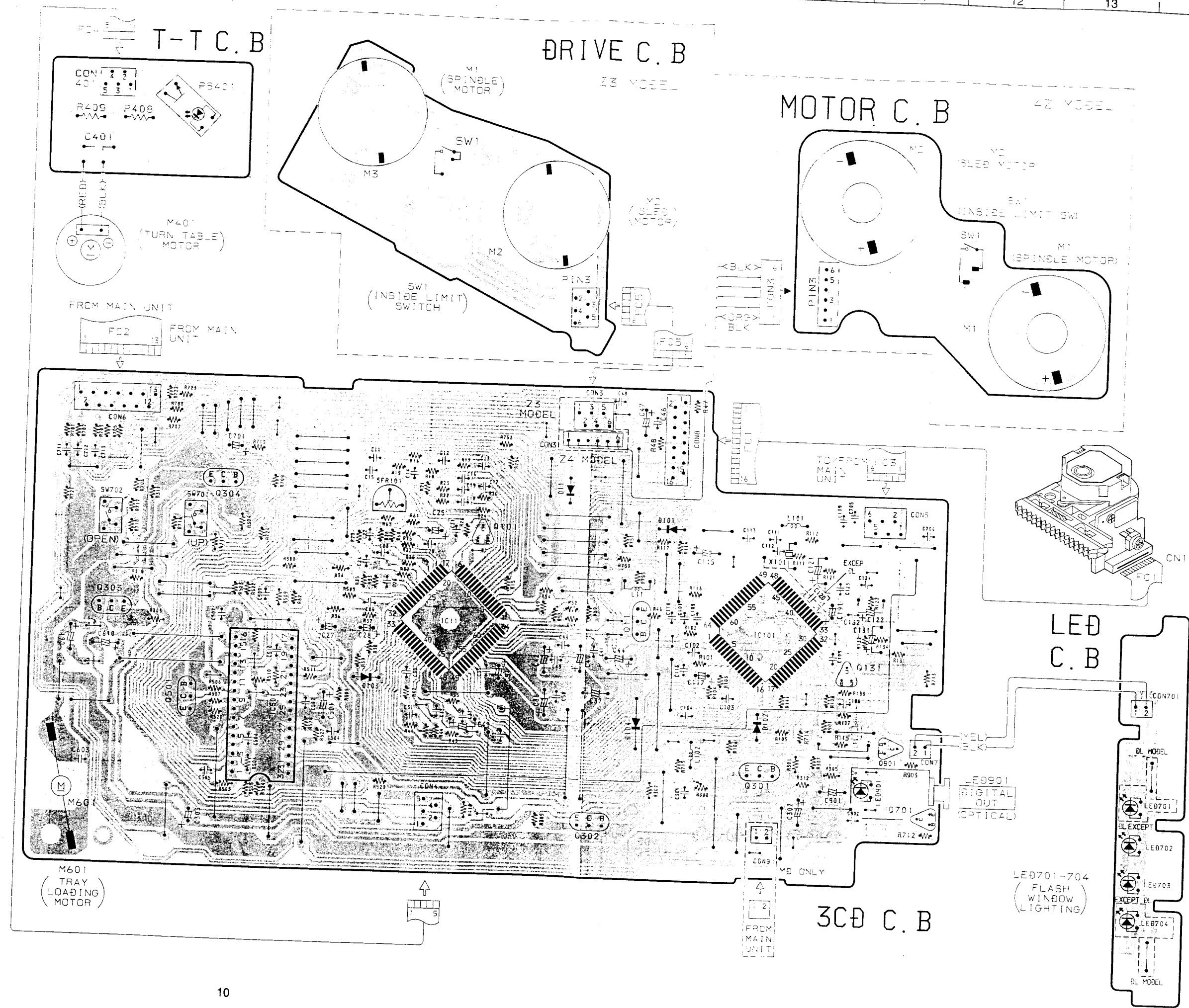
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

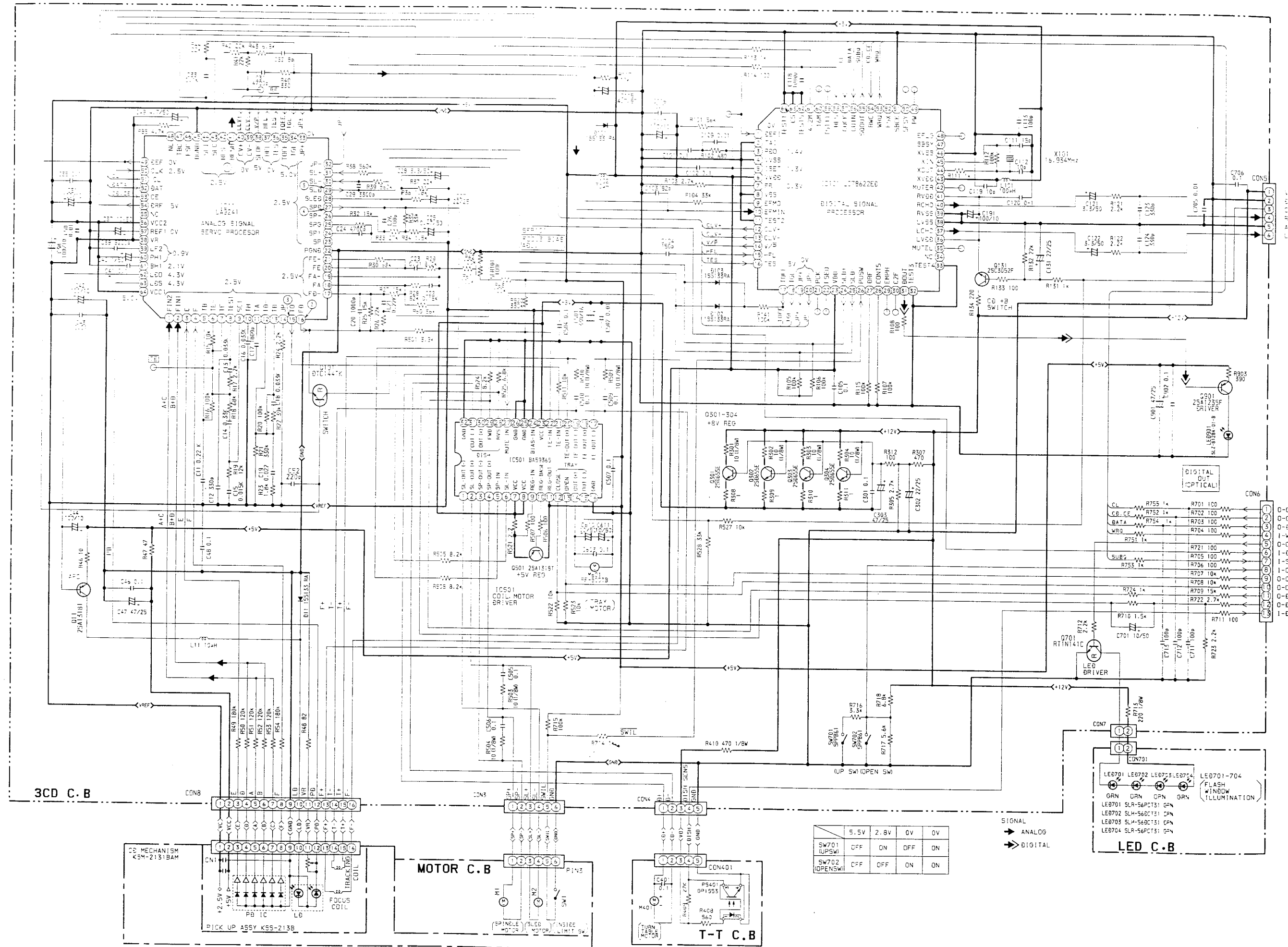


チップ抵抗
Chip resistor

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	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







IC, LA9241M

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Pin to which external pickup photo diode is connected. RF signal is created by adding with the FIN1 pin signal. FE signal is created by subtracting from the FIN1 pin signal.
2	FIN1	I	Pin to which external pickup photo diode is connected.
3	E	I	Pin to which external pickup photo diode is connected. TE signal is created by subtracting from the F pin signal.
4	F	I	Pin to which external pickup photo diode is connected.
5	TB	I	DC component of the TE signal is input.
6	TE-	I	Pin to which external resistor setting the TE signal gain is connected between the TE pin.
7	TE	O	TE signal output pin.
8	TESI	I	TES "Track Error Sense" comparator input pin. TE signal is passed through a band-pass filter then input.
9	SCI	I	Shock detection signal input pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD-	I	Pin to which external tracking phase compensation constants are connected between the TD and VR pins.
13	TD	I	Tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD-	I	Pin to which external focusing phase compensation constants are connected between the FD and FA pins.
18	FA	I	Pin to which external focusing phase compensation constants are connected between the FD- and FA- pins.
19	FA-	I	Pin to which external focusing phase compensation constants are connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE-	I	Pin to which external FE signal gain setting resistor is connected between the FE pin.
22	AGND	—	Analog signal GND.
23	NC	—	No connection.
24	SP	O	Single ended output of the CV+ and CV- pin input signal.
25	SPG	I	Pin to which external spindle gain setting resistor in 12 cm mode is connected.
26	SP-	I	Pin to which external spindle phase compensation constants are connected together with SPD pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Pin to which external sled phase compensation constants are connected.
29	SLD	O	Sled control signal output pin.
30, 31	SL-, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP-, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input from DSP. Low gain when TGL = H.
35	TOFF	I	Tracking off control signal input pin from DSP. Off when TOFF = H.

Pin No.	Pin Name	I/O	Description
36	TES	O	Pin from which TES signal is output to DSP.
37	HFL	O	"High Frequency Level" is used to judge whether the main beam position is on top of bit or on top of mirror.
38	SLOF	I	Sled servo off control input pin.
39, 40	CV-, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS-	I	RF gain setting and EFM signal 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	"Slice Level Control" is the output pin which controls the RF signal data slice level by DSP.
44	SLI	I	Input pin which control the data slice level by the DSP.
45	DGND	—	Digital system GND.
46	FSC	O	Output pin to which external focus search smoothing capacitor is connected.
47	TBC	I	"Tracking Balance Control" EF balance variable range setting pin.
48	NC	—	No connection.
49	DEF	O	Disc defect detector output pin.
50	CLK	I	Reference clock input pin. 4.23 MHz of the DSP is input.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	"Detect RF" RF level detector output.
55	FSS	I	"Focus Search Select" focus search mode ($\pm$ search/+ search) select pin.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	—	Pin to which external bypass capacitor for reference voltage is connected.
58	VR	O	Reference voltage output pin.
59	LF2	I	Disc defect detector time constant setting pin.
60	PH1	I	Pin to which external capacitor for RF signal peak holding is connected.
61	BH1	I	Pin to which external capacitor for RF signal bottom holding is connected.
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

IC, LC78622E

Pin No.	Pin Name	I/O	Description	
1	DEFI	I	Defect sense signal (DEF) input pin. (Connect to 0V when not used).	
2	TAI	I	For PLL.	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
3	PDO	O		Phase comparator output pin to control external VCO.
4	VVSS	—		GND pin for built-in VCO. Be sure to connect to 0V.
5	ISSET	I		Pin to which external resistor adjusting the PDO output current.
6	VVDD	—		Power supply pin for built-in VCO.
7	FR	I		Pin for VCO frequency range adjustment.
8	VSS	—	Digital system GND. Be sure to connect to 0V.	
9	EFMO	O	For slice level control.	EFM signal output pin.
10	EFMIN	I		EFM signal input pin.
11	TEST2	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
12, 13	CLV+, CLV-	O	Disc motor control output. Three level output is possible using command.	
14	V/P	O	Rough servo or phase control automatic selection monitoring output pin. Rough servo at H. Phase servo at L.	
15	HFL	I	Track detect signal input pin. Schmidt input.	
16	TES	I	Tracking error signal input pin. Schmidt input.	
17	TOFF	O	Tracking OFF output pin.	
18	TGL	O	Tracking gain selection output pin. Gain boost at L.	
19, 20	JP+, JP-	O	Track jump control signal output pin. Three level output is possible using command.	
21	PCK	O	EFM data playback clock monitoring pin 4.3218 MHz when phase is locked in.	
22	FSEQ	O	Sync signal detection output pin. H when the sync signal which is detected from EFM signal and the sync signal which is internally generated agree.	
23	VDD	—	Digital system power supply pin.	
24-28	SL+ - PUIN	I/O	General purpose input/output pin 1 to 5.	The pin is controlled by the serial data command from microprocessor. When the pin is not used, set the pin to the input terminal and connect to 0V, or alternately set the pin to output terminal and leave the pin open.
29	EMPH	O	De-emphasis monitor output pin. De-emphasis disc is being played back at H.	
30	C2F	O	C2 flag output pin.	
31	DOUT	O	DIGITAL OUT output pin. (EIAJ format).	
32, 33	TEST3, TEST4	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
34	N.C.	—	Not used. Set the pin to open.	
35	MUTEL	O	L-channel 1-bit DAC.	L-channel mute output pin.
36	LVDD	—		L-channel power supply pin.
37	LCHO	O		L-channel output pin.
38	LVSS	—		L-channel GND. Be sure to connect to 0V.
39	RVSS	—	R-channel 1-bit DAC.	R-channel GND. Be sure to connect to 0V.
40	RCHO	O		R-channel output pin.
41	RVDD	—		R-channel power supply pin.
42	MUTER	O		R-channel mute output pin.

Pin No.	Pin Name	I/O	Description
43	XVDD	—	Crystal oscillator power supply pin.
44	XOUT	O	Pin to which external 16.9344 MHz crystal oscillator is connected.
45	XIN	I	
46	XVSS	—	Crystal oscillator GND pin. Be sure to connect to 0V.
47	SBSY	O	Subcode block sync signal output pin.
48	EFLG	O	C1, C2, single and dual correction monitoring pin.
49	PW	O	Subcode P, Q, R, S, T, U and W output pin.
50	SFSY	O	Subcode frame sync signal output pin. Falls down when subcode enters standby.
51	SBCK	I	Subcode read clock input pin. Schmidt input. (Be sure to connected to 0V when not in use.)
52	FSX	O	Pin outputting the 7.35 kHz sync signal which is generated by dividing frequency of crystal oscillator.
53	WRQ	O	Subcode Q output standby output pin.
54	RWC	I	Read/write control input pin. Schmidt input.
55	SQOUT	O	Subcode Q output pin.
56	COIN	I	Command input pin from microprocessor.
57	CQCK	I	Command input read clock or subcode read input clock from SQOUT pin
58	RES	I	LC78622 reset input pin. Set this pin to L once when the main power is turned on.
59	TST11	O	Test signal output pin. Use this pin as open (normally L output).
60	16M	O	16.9344 MHz output pin.
61	4.2M	O	4.2336 MHz output pin.
62	TEST5	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
63	CS	I	Chip select signal input pin with built-in pull-down resistor. Be sure to connect to 0V while it is not controlling.
64	TEST1	I	Test signal input pin without built-in pull-down resistor. Be sure to connect to 0V.

te: The same potential must be applied to the respective power supply terminals. (VDD, VVDD, LVDD, RVDD, XVDD)

1. How to Activate CD Test Mode

Insert the AC plug while pressing the function CD button.
All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode

Either one of the following operations will cancel the CD test mode.

- Press the function button.
- Press the power switch button.
- (except CD function button)
- Disconnect the AC plug

3. CD Test Mode Functions

When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated.	• FL display check (All displays light.)
Search mode No.2	■ key		• Laser diode turns always ON. (CD block power is ON.) • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key		• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	|| key		• During normal disc playback - Press once; tracking servo OFF - Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏏ key ⏏ key	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

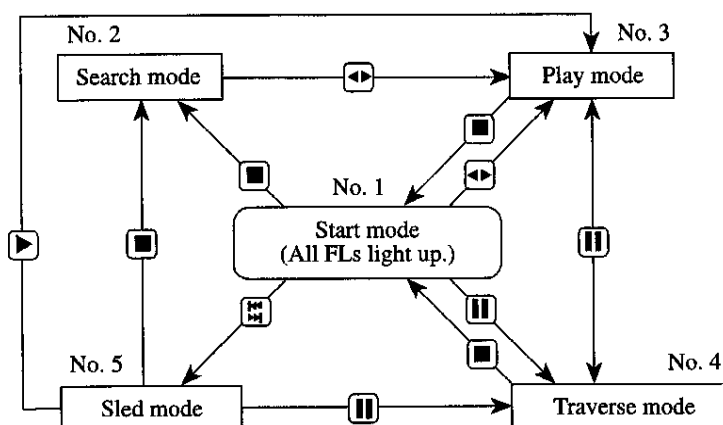
*NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

*NOTE 2: Do not press the ⏏ or ⏏ keys when the machine is in the || status is active. If they are pressed, playback will not be possible after the || status has been canceled. If the ⏏ or ⏏ keys are pressed in the || status, press the ■ key and return to the start mode (No.1).

*NOTE 3: When pressing the ⏏ or ⏏ keys, take care to avoid damage to the gears. Because the sled motor is activated when the fi or fi keys are pressed, even when the pick-up is at the outermost or innermost track.

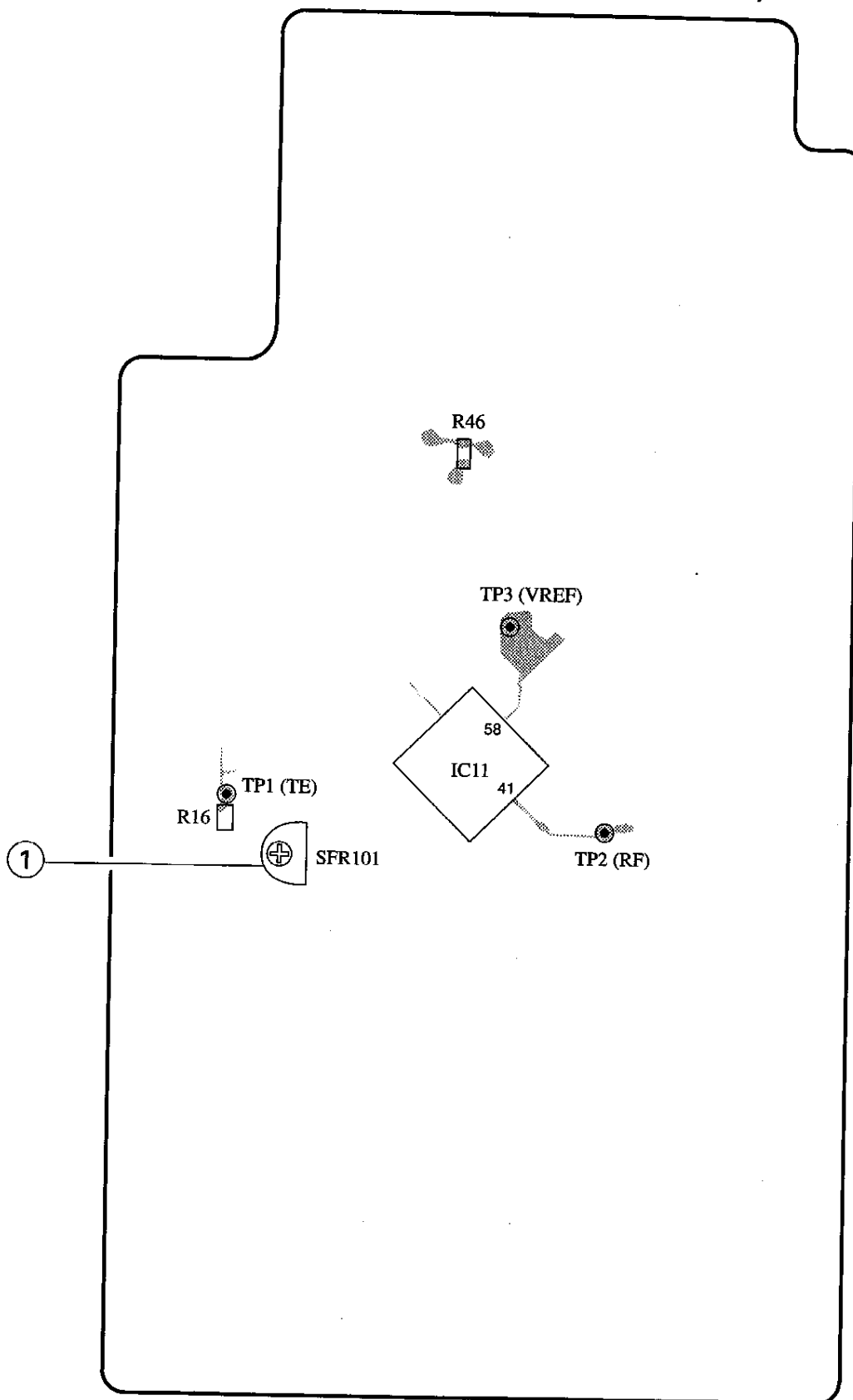
4. Operation Outline

The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

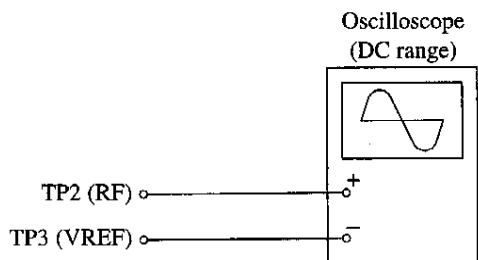
3CD C.B (PATTERN SIDE)



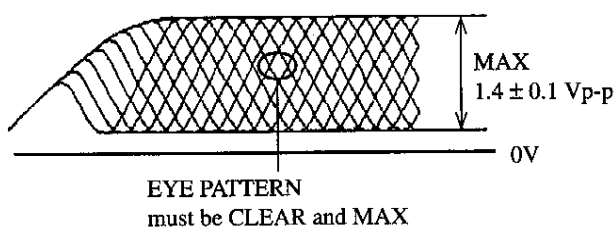
- Note:
- Connect a probe (10: 1) of the oscilloscope test point for adjustment.
 - Connect ground (⊖) terminal of oscilloscope probe to TP3 (VREF) for all adjustment.

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

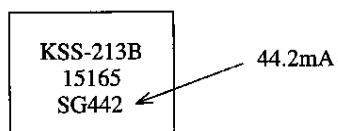


- 1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
- 2) Turn on the power switch.
- 3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
- 4) Adjust SFR101 so that RF signal of the test point TP2 (RF) is MAX and CLEARREST.



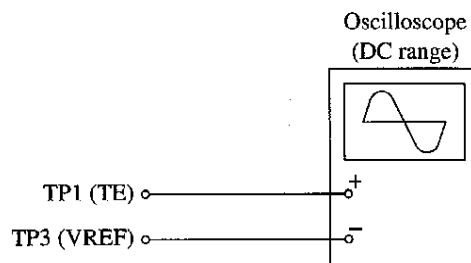
VOLT/DIV: 0.5V
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R46 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

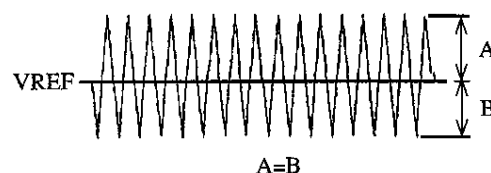


$$\text{Laser current } I_{op} = \frac{\text{Voltage across R46}}{10\Omega}$$

2. Tracking Balance Check

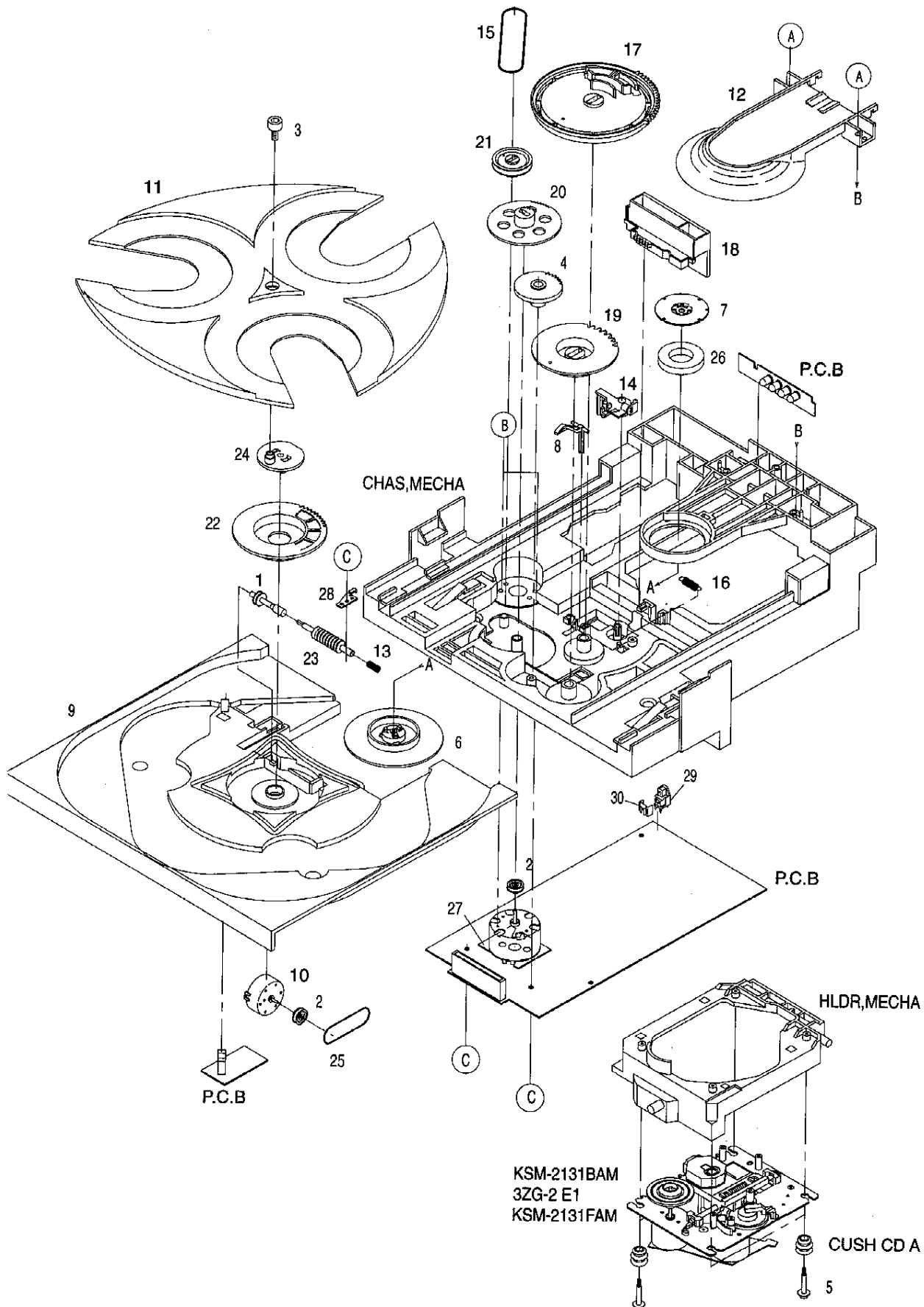


- 1) Connect an oscilloscope to test points TP1 (TE) and TP3 (VREF).
- 2) Start up the CD test mode.
- 3) Insert the test disc TCD-782 (YEDS-18) and enter the traverse mode of the CD test mode.
- 4) Confirm that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.
- 5) After confirming the waveform, release the CD test mode.



VOLT/DIV: 20mV
TIME/DIV: 1mS

MECHANICAL EXPLODED VIEW 1/1

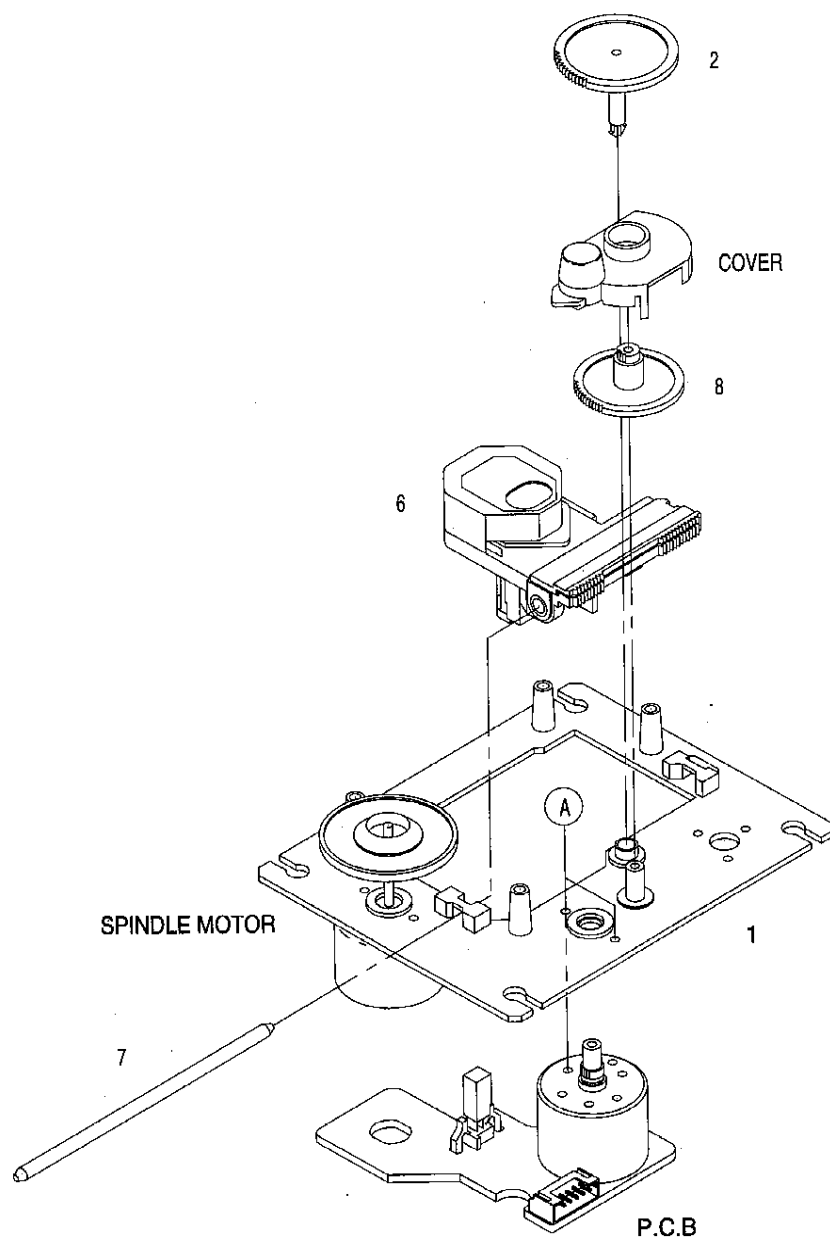


MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZG1-239-210		PULLY, WORM N	21	84-ZG1-207-010		PULLEY, RELAY
2	81-ZG1-212-010		PULLY, LOAD MO	22	84-ZG1-221-010		GEAR, MAIN TT
3	81-ZG1-239-010		S-SCREW, TT	23	84-ZG1-238-010		GEAR, WORM N
4	81-ZG1-291-110		GEAR, TRAY RELAY NO3	24	84-ZG1-224-010		LEVER, TT
5	81-ZG1-271-010		S-SCREW MECH REAR	25	84-ZG1-225-010		BELT, SQ1.0-63.3
6	81-ZG1-277-310		HLDR, MAGNET N	26	84-ZG1-268-010		MAGNET, CLAMPER 97<Z4>
7	81-ZG1-255-110		PLATE, MAGNET MK2	26	83-ZG3-602-010		RING, MAG<Z3>
8	83-ZG3-213-010		LVR, SW	27	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
9	84-ZG1-003-310		TRAY, NO2-B	28	84-ZG1-259-010		SPR-P, WORM
10	87-045-364-010		MOTOR (BCH3B14)	29	84-ZG1-244-310		CABI, OPTICAL
11	84-ZG1-005-210		TURNTABLE, NO1(*)	30	84-ZG1-261-010		LID, OPTICAL
12	84-ZG1-011-010		REFLECTOR, CD	A	87-067-703-010		TAPPING SCREW, BVT2+3-10
13	84-ZG1-248-010		SPR-C, WORM	B	87-251-070-410		U+2.6-3
14	84-ZG1-208-210		LEVER, CAM	C	87-067-981-010		BVT2+3-6 BLK
15	84-ZG1-209-010		BELT, SQ1.8-117.7				
16	84-ZG1-211-010		SPR-E CAM S				
17	84-ZG1-215-410		GEAR, MAIN CAM BLU				
18	84-ZG1-216-310		SLIDE, MECHA CAM YEL				
19	84-ZG1-205-110		GEAR, TRAY				
20	84-ZG1-206-110		GEAR, RELAY				

CD MECHANISM EXPLODED VIEW 1/1 (KSM-2131BAM)



CD MECHANISM PARTS LIST 1/1 (KSM-2131BAM)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	9X-262-587-110		MOTOR CHASSIS ASSY
2	92-626-907-010		GEAR (A)
6	98-848-379-310		OPTICAL PICK UP KSS-213B
7	92-626-908-010		SHAFT SLED
8	92-627-003-010		GEAR B
A	97-621-255-150		SCREW+P2-3

MODEL NO. 4ZG-1Z3/Z4 (D, DL, SH/D, DL, SH, MD)

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC				C113	87-010-322-080		C-CAP,S 100P-50 J CH
				C115	87-010-404-080		CAP,E 4.7-50 M SME
	87-A20-446-010		C-IC,LA9241ML	C116	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
	87-A20-459-010		C-IC,LC78622ED	C117	87-010-263-040		CAP,E 100-10 M SME
	87-A20-445-010		IC,BA5936	C118	87-010-178-080		C-CAP,S 1000P-50 K B
TRANSISTOR				C119	87-010-154-080		C-CAP,S 10P-50 D CH
				C120	87-018-209-080		CAP, CER 0.1-50V<D,4MD>
				C121	87-010-403-080		CAP,E 3.3-50 M SME
	87-026-609-080		TR,KTA1266GR<DL>	C122	87-010-403-080		CAP,E 3.3-50 M SME
	89-113-187-080		TR,2SA1318TU<D,4MD>	C123	87-012-157-080		C-CAP,S 330P-50 J CH GRM
	87-026-295-080		C-TR,DTC144TK				
	87-A30-076-080		C-TR,2SC3052F	C124	87-012-157-080		C-CAP,S 330P-50 J CH GRM
	89-406-554-580		TR,2SD655DE	C131	87-010-382-080		CAP,E 22-25 M SME
				C191	87-010-263-040		CAP,E 100-10 M SME
	87-A30-073-080		C-TR,RT1N 141C	C301	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
	87-A30-075-080		C-TR,2SA1235F	C302	87-010-382-080		CAP,E 22-25 M SME
DIODE				C303	87-010-260-080		CAP,E 47-25 SME
				C501	87-010-381-080		CAP,E 1000-16 SMG
				C502	87-010-197-080		C-CAP,S 0.01-25 K B
	87-002-564-080		DIODE,1SS133-RA	C504	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
				C505	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
3CD C.B				C506	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
				C507	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
	84-ZG1-244-210		CABI,OPTICAL	C509	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C11	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB	C510	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C12	87-012-157-080		C-CAP,S 330P-50 J CH GRM	C603	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C13	87-016-369-080		C-CAP,S 0.033-25 K B				
C14	87-A10-201-080		C-CAP,S 0.33-16 K B	C610	87-010-405-080		CAP,E 10-50 M SME
				C611	87-010-405-080		CAP,E 10-50 M SME
C15	87-010-590-080		C-CAP,S 0.015-16 K R	C701	87-010-405-080		CAP,E 10-50 M SME
C16	87-016-083-080		C-CAP,S 0.15-16 RK	C705	87-010-197-080		C-CAP,S 0.01-25 K B
C17	87-010-184-080		CHIP CAPACITOR 3300P(K)	C706	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C18	87-016-083-080		C-CAP,S 0.15-16 RK				
C19	87-010-198-080		C-CAP,S 0.022-25 K B	C711	87-010-322-080		C-CAP,S 100P-50 J CH
				C712	87-010-322-080		C-CAP,S 100P-50 J CH
C20	87-010-178-080		C-CAP,S 1000P-50 K B	C713	87-010-322-080		C-CAP,S 100P-50 J CH
C21	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB	C901	87-010-260-080		CAP,E 47-25 SME
C22	87-016-083-080		C-CAP,S 0.15-16 K R	C902	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C23	87-010-197-080		C-CAP,S 0.01-25 K B				
C24	87-010-186-080		C-CAP,S 4700P-50 K B	CON3	84-ZG1-648-010		CONN ASSY,6P<D,4MD>
				CON3	84-ZG1-675-010		CONN ASSY,6P (GETA)<Z4>
C25	87-010-400-040		CAP,E 0.47-50 SME	FC1	85-NFT-611-110		FF-CABLE 16P-1.0
C26	87-010-322-080		C-CAP,S 100P-50 J CH	FC4	84-ZG1-614-210		F-CABLE,5P 1.25 210MM<D,4MD>
C27	87-010-382-040		CAP,E 22-25 SME	FC4	84-ZG1-672-010		F-CABLE,5P 1.25 210MM WHITE N<DL>
C28	87-010-545-040		CAP,E 0.22-50 SME				
C29	87-010-184-080		C-CAP,S 3300P-50 K B	FC5	84-ZG1-630-010		CABLE FFC 6P-1.25<Z3>
				L11	87-005-602-080		COIL,10UH J LAV35
C30	87-010-145-080		C-CAP,S 1P-50 C CH GRM	L101	87-005-614-080		COIL,100UH
C31	87-010-186-080		C-CAP,S 4700P-50 K B	L102	87-005-602-080		COIL,10UH J LAV35
C32	87-010-315-080		C-CAP,S 27P-50 CH	LED901	87-A40-123-010		LED,SLZ-8128A-01-B
C33	87-016-081-080		C-CAP,S 0.1-16 K R				
C35	87-010-196-080		C-CAP,S 0.1-25 Z F C2012	M601	87-045-305-010		MOT,RF-500TB
				SFR101	87-A90-787-080		SFR,100K H HOKU<DL>
C37	87-010-405-080		CAP,E 10-50 M SME	SFR101	87-024-437-080		SFR100K,RH063EC<D,4MD>
C38	87-010-263-080		CAP,E 100-10 SME	SW701	87-036-109-010		SW,MICRO SPPB61
C39	87-010-596-020		C-CAP,S 0.047-16 RK	SW702	87-036-109-010		SW,MICRO SPPB61
C40	87-010-401-080		CAP,E 1-50 M SME				
C41	87-010-805-080		CAP, S 1-16	X101	87-A70-046-010		VIB,XTAL 16.934MHZ
C42	87-010-263-080		CAP,E 100-10 SME				
C43	87-010-197-080		C-CAP,S 0.01-25 K B	LED C.B			
C44	87-010-263-080		CAP,E 100-10 SME				
C46	87-010-196-080		C-CAP,S 0.1-25 Z F C2012	LED701	87-A40-316-080		LED,SLR-56PCT31 GRN<D,4MD>
C47	87-010-260-080		CAP,E 47-25 SME	LED702	87-A40-268-080		LED,SLH-56DCT31 ORN<D,4MD>
				LED702	87-A40-446-040		LED,SLP-7131F-81H-S-T1 P-GRN<DL>
C48	87-010-196-080		C-CAP,S 0.1-25 Z F C2012	LED703	87-A40-268-080		LED,SLH-56DCT31 ORN<D,4MD>
C49	87-010-404-080		CAP,E 4.7-50 M SME	LED703	87-A40-447-040		LED,SLP-6130C-81H-S-T1 ORN<DL>
C50	87-010-197-080		C-CAP,S 0.01-25 K B				
C51	87-010-263-040		CAP,E 100-10 M SME	LED704	87-A40-316-080		LED,SLR-56PCT31 GRN<D,4MD>
C52	87-012-156-080		C-CAP,S 220P-50 J CH GRM				
C101	87-016-369-080		C-CAP,S 0.033-25 B K	T-T C.B			
C102	87-016-081-080		C-CAP,S 0.1-16 K R				
C103	87-010-321-080		C-CAP,S 82P-50 J CH	C401	87-018-214-080		CAP,TC U 0.1-50 Z F SA
C104	87-012-154-080		C-CAP,S 150P-50 J CH GRM	M401	87-045-364-010		MOT,BCH3B
C105	87-010-196-080		C-CAP,S 0.1-25 Z F C2012	PS401	87-026-573-010		SNSR,PHOTO GP1S53
C109	87-010-197-080		C-CAP,S 0.01-25 K B				
C111	87-010-312-080		C-CAP,S 15P	MOTOR C.B<Z4>			
C112	87-010-154-080		C-CAP,S 10P-50 D CH				

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
M2	91-669-930-110		SLED MOTOR ASSY<Z4>
PIN3	91-564-722-110		CONNECTOR 6P<Z4>
SW1	91-572-085-110		LEAF SW<Z4>

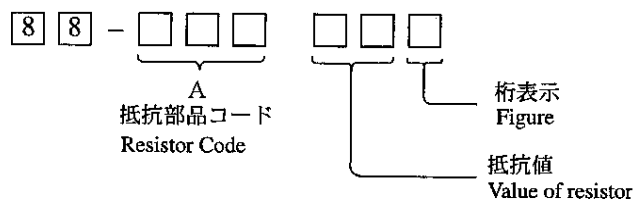
DRIVE C.B<Z3>

M1	87-045-358-010	MOT,RF-310TA 43<Z3>
M2	87-045-356-010	MOT,RF-310TA 30<Z3>
SW1	87-A90-042-010	SW,LEAF MSW-17310MVPO<Z3>

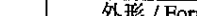
- Regarding connectors, they are not stocked as they are not the initial order items.
The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ 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



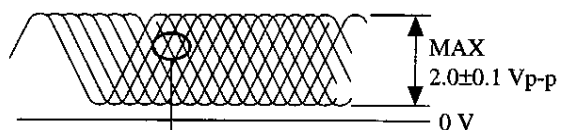
チップ抵抗
Chip resistor

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	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

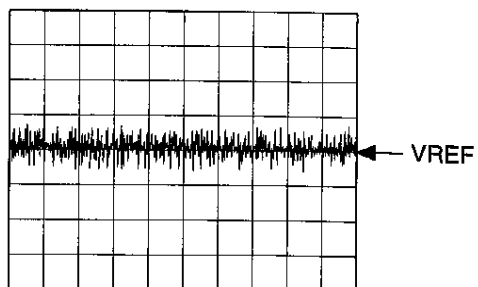
Refer to the following pages for the common section.

- IC BLOCK DIAGRAM See page 7
- IC DESCRIPTION See page 14
- TEST MODE See page 18
- ELECTRICAL ADJUSTMENT See page 19
- MECHANICAL EXPLODED VIEW 1/1 See page 21
- MECHANICAL PARTS LIST 1/1 See page 22

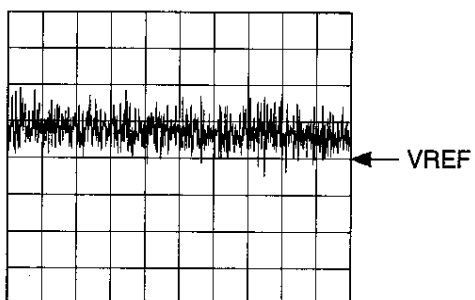
① IC11 Pin ④ (RFSM)

VOLT/DIV: 0.5V
TIME/DIV: 1μSEYE PATTERN
must be CLEAR and MAX

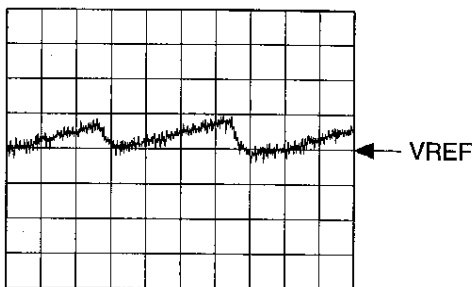
④ IC11 Pin ②⑦ (SPD)

VOLT/DIV: 100mV
TIME/DIV: 1mS

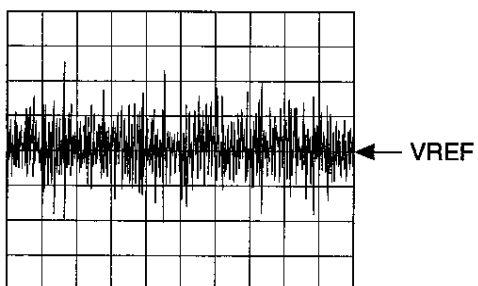
② IC11 Pin ①⑥ (FD)

VOLT/DIV: 100mV
TIME/DIV: 1mS

⑤ IC11 Pin ②⑨ (SLD)

VOLT/DIV: 200mV
TIME/DIV: 2S

③ IC11 Pin ①⑤ (TO)

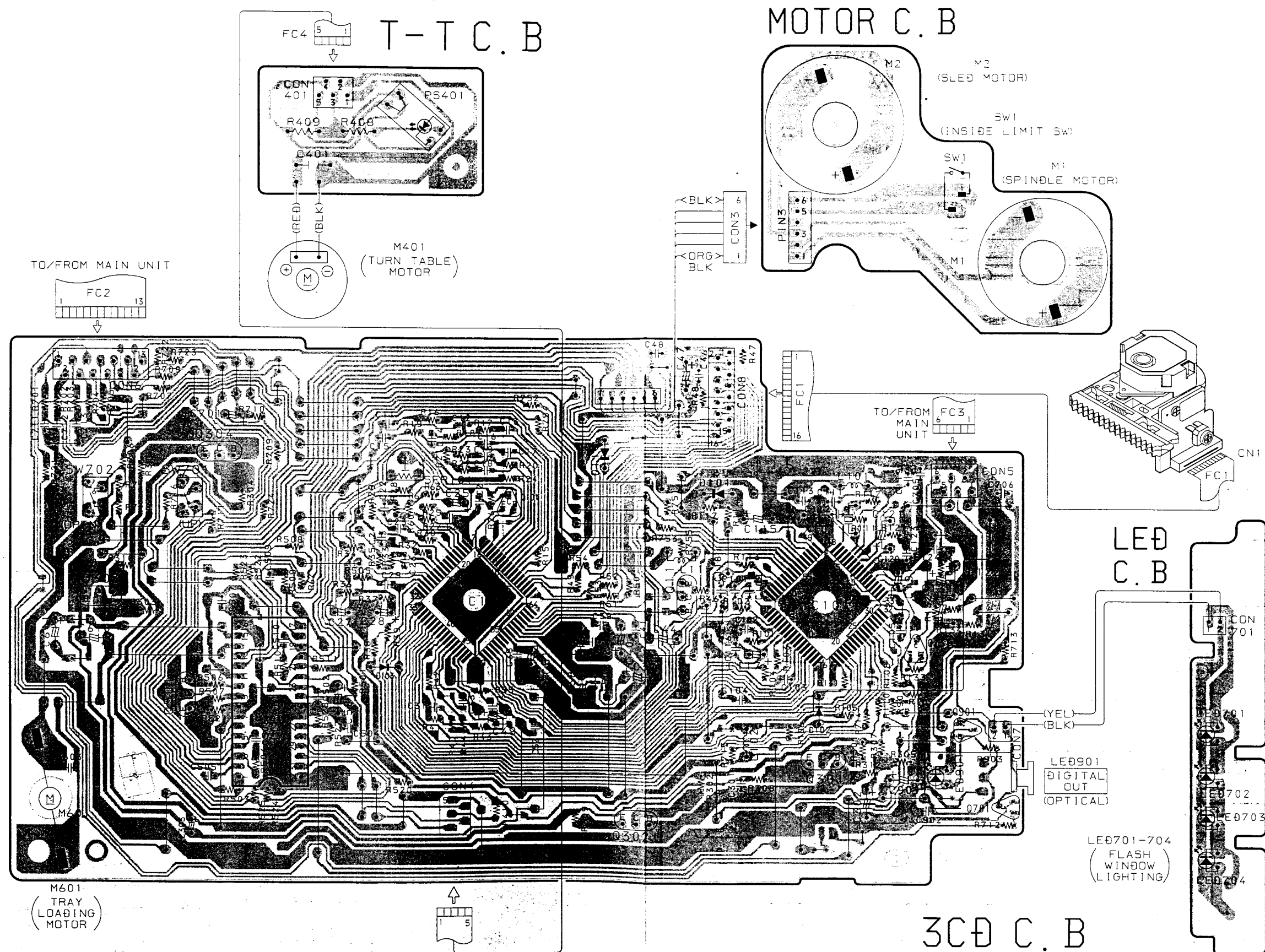
VOLT/DIV: 100mV
TIME/DIV: 1mS

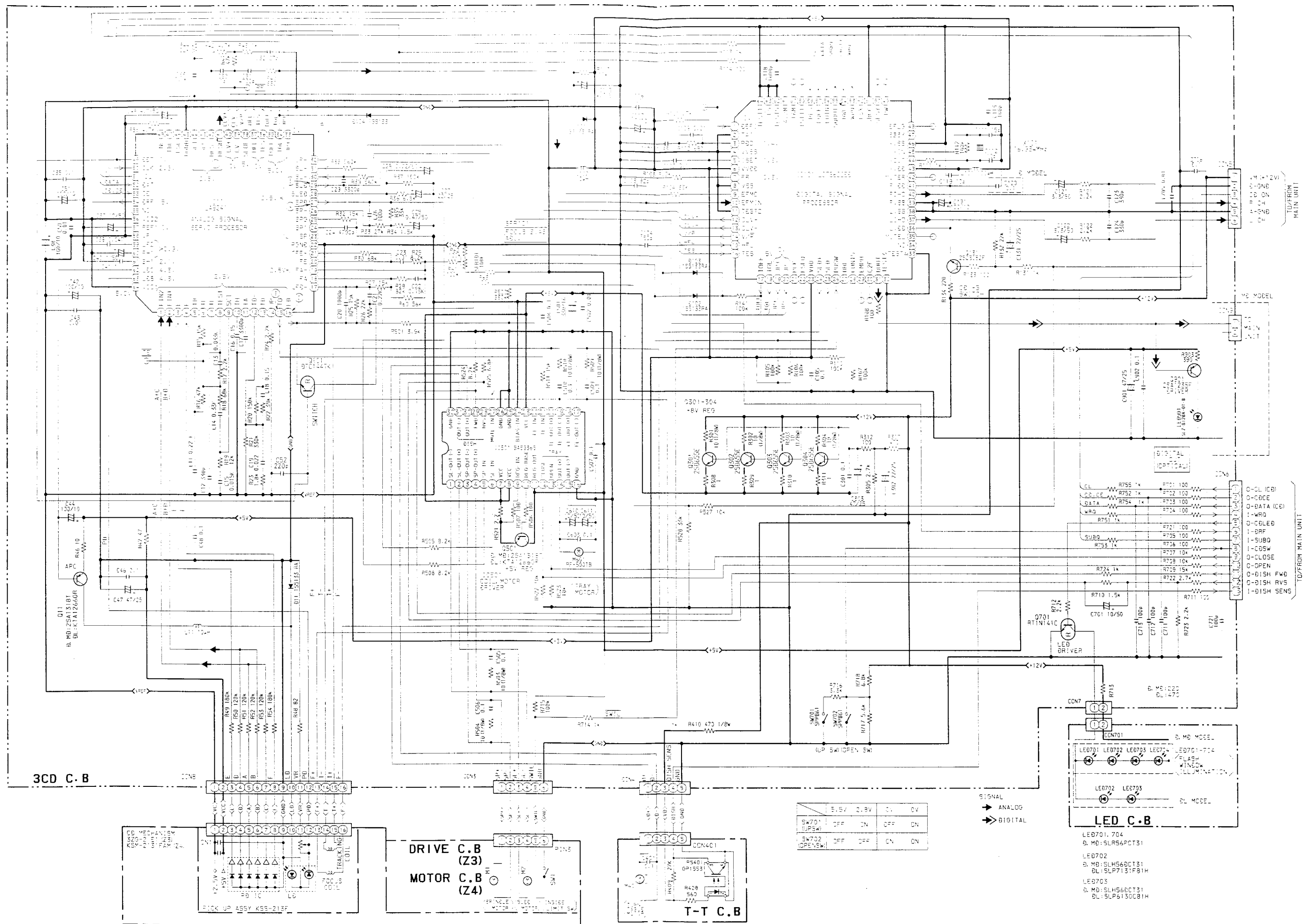
REF



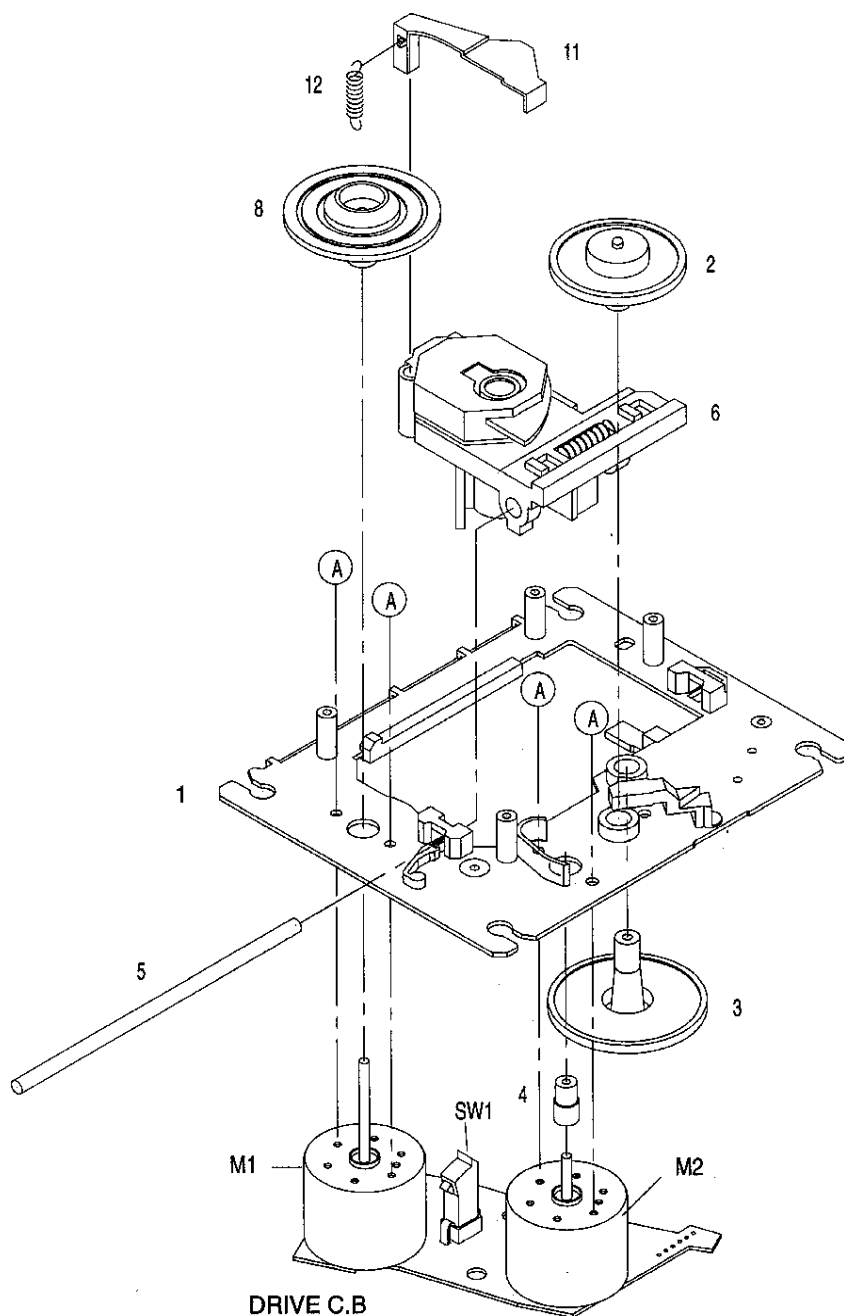
A
B
C
D
E
F
G
H
I
J

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





CD MECHANISM EXPLODED VIEW 1/1 (3ZG-2 E1)

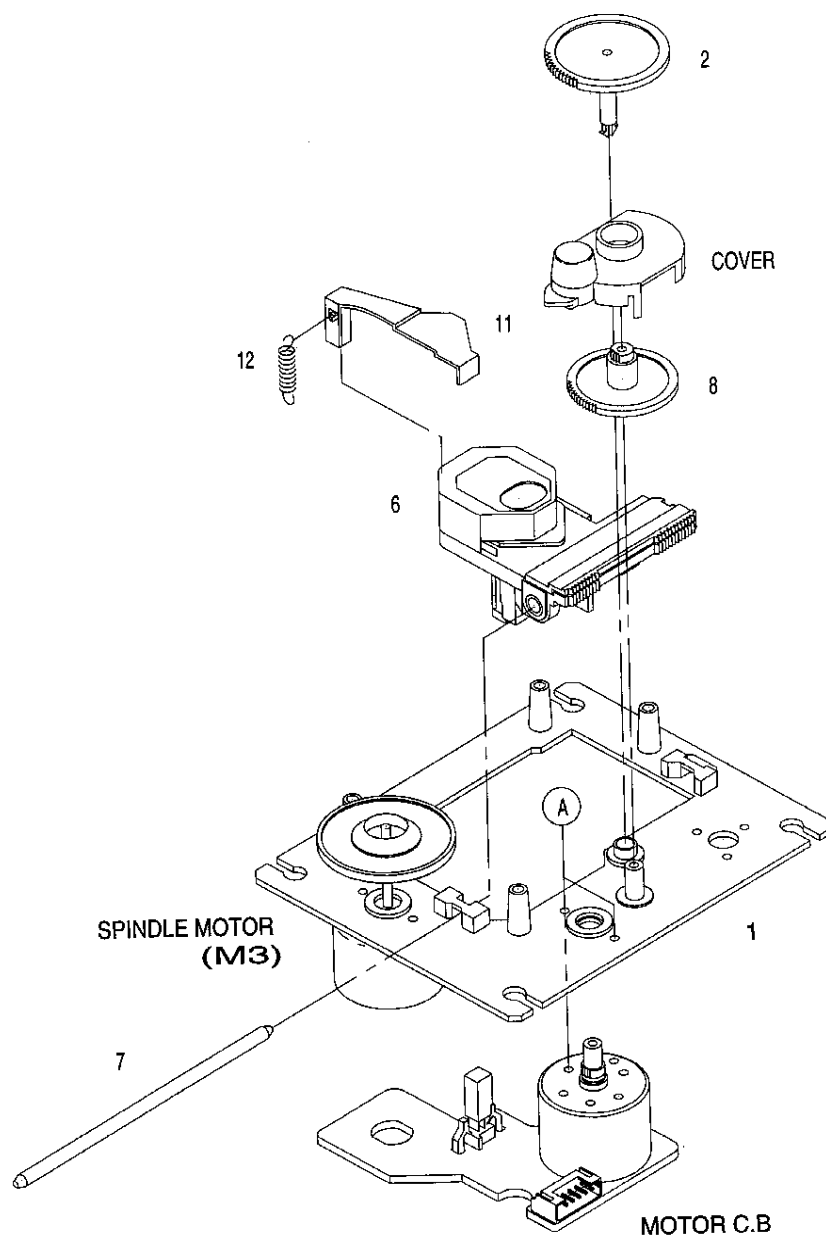


CD MECHANISM PARTS LIST 1/1 (3ZG-2 E1)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-243-110		CHAS ASSY, SHT
2	83-ZG2-235-010		GEAR, A3
3	83-ZG2-205-210		GEAR, B
4	83-ZG2-236-010		GEAR MOTOR 3
5	83-ZG2-240-010		SHAFT, SLIDE 3
6	87-A90-836-010		PICKUP, KSS-213F
8	83-ZG2-233-010		TURN TABLE, A5
11	83-ZG2-245-110		LEVER, SHUTTER
12	83-ZG2-250-010		SPR-E, SHT 2
A	87-261-032-210		SCREW V+2-3

CD MECHANISM EXPLODED VIEW 1/1 (KSM-2131 FAM)



CD MECHANISM PARTS LIST 1/1 (KSM-2131 FAM)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	9X-262-629-220		MOTOR CHASSIS ASSY (MB) (FR)
2	92-626-907-010		GEAR (A) (S)
6	87-A90-836-010		OPTICAL PICK UP KSS-213F
7	92-626-908-020		SHAFT SLED
8	92-627-003-010		GEAR (B)
11	92-646-697-020		LENS SHUTTER (F)
12	92-646-702-010		SPRIG EXTENSION
A	97-621-255-150		SCREW+P2-3

1. CX-SNS208
2. CX-NS203
3. CX-NS202
4. CX-NS205
5. CX-ZR220
6. CX-ZR222
7. CX-NH33MD
8. CX-SNH33MD
9. CX-SNH35MD
10. CX-SNH37MD
11. CX-SN3000M
12. CX-NS5LH
13. CX-NS307
14. CX-NS303
15. CX-NS306
16. CX-NA303
17. CX-SNS303
18. CX-SNS909

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G- -	
G- -	
G- -	

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Tokyo Japan