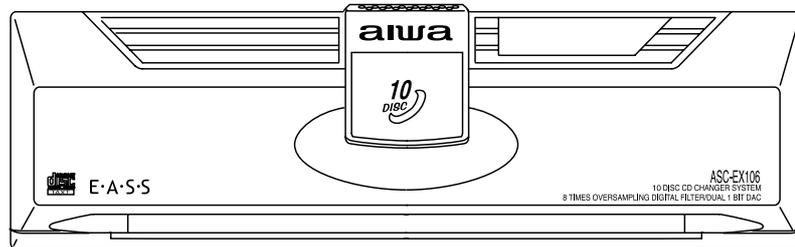




# ADC-EX108 YJ

# ADC-M105 YJ



# SERVICE MANUAL

STEREO CAR  
CD CHANGER SYSTEM

BASIC CD MECHANISM : 8ZG-4 RNF

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual" ADC-EX108(YJ2)/ADC-M105(YJ), (S/M Code No. 09-008-404-5T9).

**aiwa**  
S/M Code No. 09-009-404-5R9

REVISION  
DATA

## SPECIFICATIONS

### <Compact disc changer>

<b>System</b>	Compact disc digital audio system
<b>Frequency response</b>	5 Hz - 20 kHz
<b>Wow and flutter</b>	Below measurable limit
<b>Signal to noise ratio</b>	91 dB or more
<b>Outputs</b>	Line output (for changer connector only)
<b>Operating temperature</b>	-10 °C to 55 °C
<b>Dimensions</b>	254 x 83 x 173mm (w/h/d) (10 x 3 <sup>3</sup> / <sub>8</sub> x 6 <sup>7</sup> / <sub>8</sub> in.)
<b>Weight</b>	2.1 kg (4.62 lbs.)
<b>Power requirement</b>	12 V DC car battery (negative ground)
<b>D/A converter</b>	1 bit DAC, 8 times over sampling
<b>Sampling rate</b>	44.1 kHz
<b>Disc size</b>	120mm

• Design and specifications are subject to change without notice.

## ACCESSORIES / PACKAGE LIST

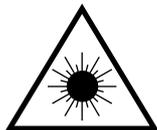
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-KM3-919-010	IB, Y	M105-B<M105>
1	8Z-KM3-918-010	IB, Y	108-B<EX108>
2	87-B10-208-010	VWWS+4-12	BLK
3	8Z-KM1-222-110	PLATE, UNIT	ASSY
4	8Z-KM1-218-010	NUT, 5	HEX-FLANGE
5	8Z-KM1-209-010	HLDR, UNIT	10A
6	8Z-KM1-216-010	HLDR, UNIT	10B
7	8Z-KM4-651-010	CABLE ASSY,	13PIN-DIN

## 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.



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

### VAROITUS!

Laitteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

### WARNING!

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

### CAUTION

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

### ATTENTION

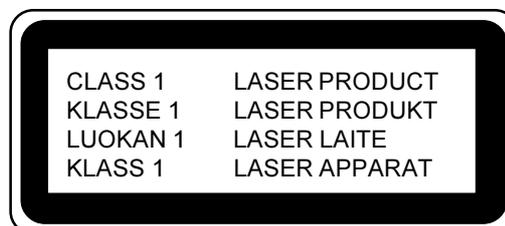
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

### ADVARSEL

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

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

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



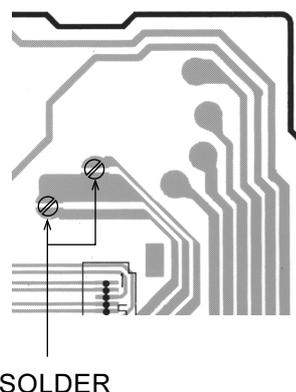
## Precaution to replace Optical block

### (KSS-710A)

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 right figure.

PICK-UP ASSY  
P.C.B



# SERVICE JIG AND TOOLS

## 1. How to Use the Repair Jig

Use the following repair jig kit for servicing.

	Part name	Part code
For 10 CD changer	JIG-ADC-EX106	SV-J00-090-010

The kit contains the following parts (Refer to Fig-1) ;

- |                          |       |
|--------------------------|-------|
| 1. FFC (26P/25 cm)       | 1 pcs |
| 2. P.W.B. FLEX           | 1 pcs |
| 3. P.W.B. JIG            | 1 pcs |
| 4. TRANSISTOR (2SD-2395) | 1 pcs |
| 5. P.W.B. KEY            | 1 pcs |

**(1) Remove the cabinet as follows;**

- 1) Remove the CABI BOTTOM by removing the four screws VTT+2.6-6B (Refer to Fig-2).

**(2) Remove the P.W.B. MAIN as follows;**

- 1) Remove all terminals of the transistor Q623 (2SD2395) by unsoldering them.
- 2) Remove the two motor wires (BLU/WHT).
- 3) Remove the two wires (BLK/BRN) of the sensor (PD201).
- 4) Remove the P.W.B. MAIN from the unit by removing the four screws V+2-3.
- 5) Disconnect the FFC of pickup from CN101.
- 6) Disconnect the PWB FLEX from CON1.
- 7) Remove the LED (LED201, GL380) from the P.W.B. MAIN.
- 8) Remove the sensor (PS201, SENR GP1S94) from P.W.B. MAIN.

**(3) Install the repair jig as follows;**

- 1) Install the P.W.B. JIG into the unit and fix it with screws. (Refer to Fig-3).

**(4) Attach the parts as follows, (Refer to Fig-4);**

- 1) Attach the supplied transistor to the location of the P.W.B. MAIN from which Q623 is removed in step (2).
- 2) Connect the supplied PWB FLEX to CON1.
  - When the CONTROL UNIT is not used, use the P.W.B. KEY instead. (Refer to step (6), How to use the repair jig.)
- 3) Connect the FFC cable to CON101 and pickup. (The supplied FFC cannot be used because pitches and number of pins are different.)

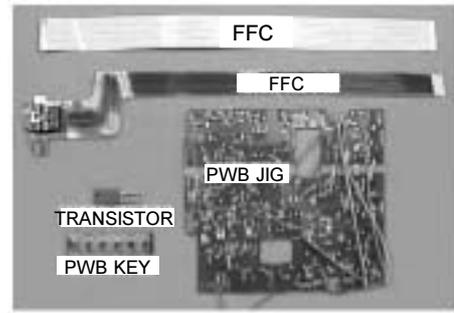


Fig-1

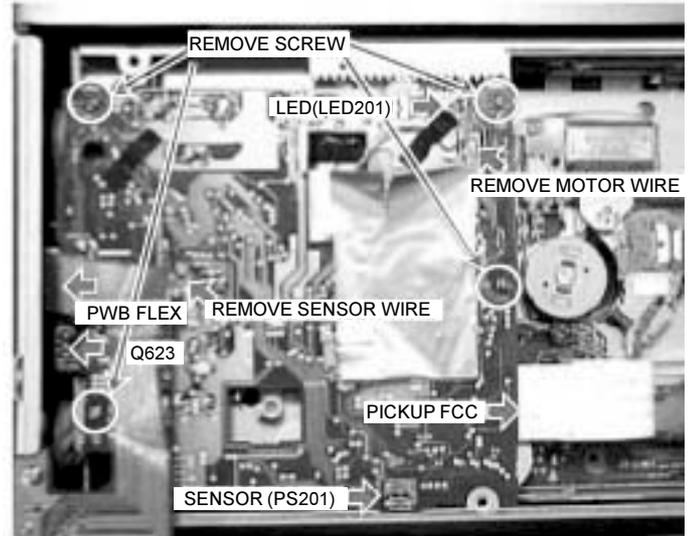


Fig-2



Fig-3

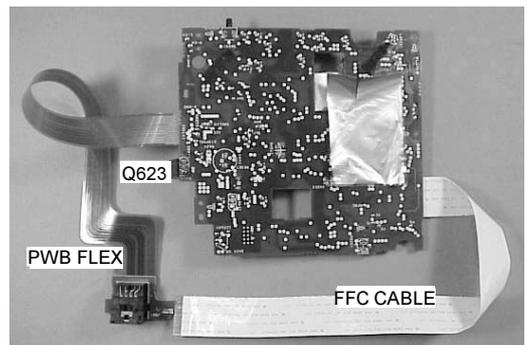


Fig-4

- (5) Perform wirings to the C.Bs. Refer to Fig-5/-6;
- Be sure to connect the wires coming from the P.W.B. JIG to the same connecting points on the MAIN C.B as follows.
- 1) Connect the motor wires and sensor (PD201) wires that are removed in step (2) to the P.W.B. JIG.
  - 2) Connect all wires coming from the P.W.B. JIG to the respective lands of the MAIN C.B by soldering.
    - Connect the motor wires (BLU/WHT) of the P.W.B. JIG to the motor wire connecting lands on the MAIN C.B by soldering.
    - Connect the LED (LED201) wires (RED/GRY) of the P.W.B. JIG to the LED wire connecting lands on the MAIN C.B by soldering.
    - Connect the sensor wires (BRN/BLK) of the P.W.B. JIG to the sensor wire connecting lands on the MAIN C.B by soldering.
    - Connect the sensor (PS201) wires (YEL/ORG/ RED/BRN) of the P.W.B. JIG to the sensor wire connecting lands on the MAIN C.B by soldering.
    - Connect the SW202 wire (WHT) of the P.W.B. JIG to the SW202 wire connecting lands on the MAIN C.B by soldering.
    - Connect the SW203 wire (BLK) of the P.W.B. JIG to the SW203 wire connecting lands on the MAIN C.B by soldering.
    - Connect the SW204 wires (BLU/WHT) of the P.W.B. JIG to the leads of SW204 on the MAIN C.B by soldering. Refer to Fig-6.

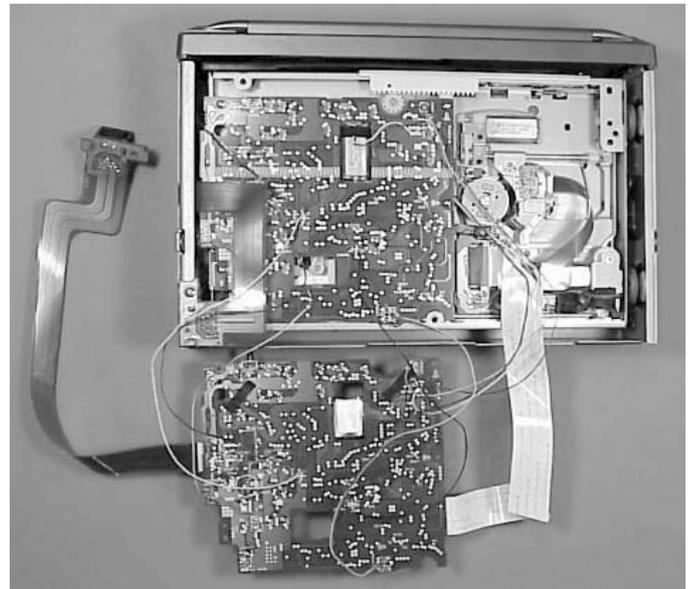


Fig-5

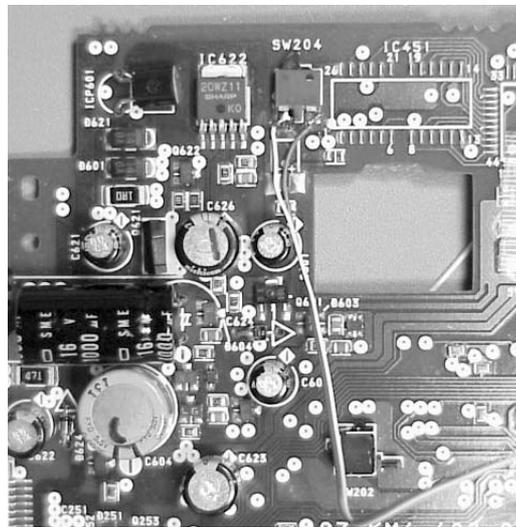


Fig-6

- (6) How to use the repair jig;
- When the Control Unit (CDC/CT) is going to be used.
- 1) After all wires and connections are complete, connect the Control Unit (CDC/CT) with the DIN jack of the P.W.B. FLEX.
  - 2) Connect external power +12 V to ACC/BACKUP wire and ground (-) to the GROUND wire.
  - 3) Perform the operation check.
- When the Control Unit (CDC/CT) is not used.
- 1) Connect the supplied P.W.B KEY to the MAIN C.B by performing all connections between them. Refer to Fig-7/-8.  
(Wires to be used for connecting the MAIN C.B are not supplied.)
  - 2) Connect the wires as follows. Refer to Fig-9.

P.W.B KEY	MAIN C.B
HOT	TO
GND	GND

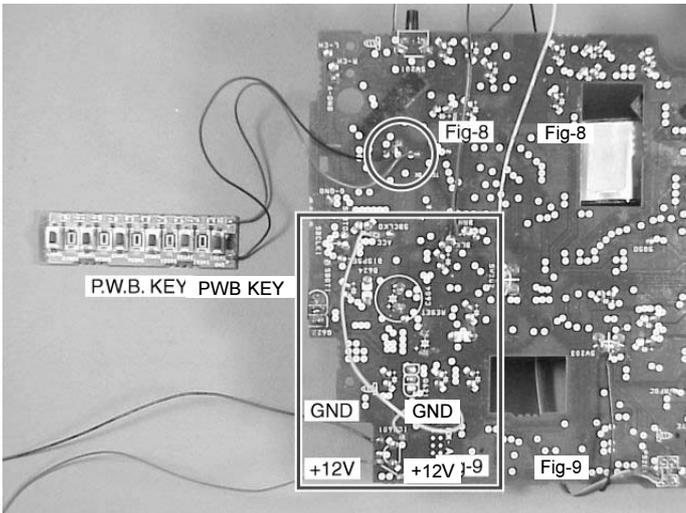


Fig-7

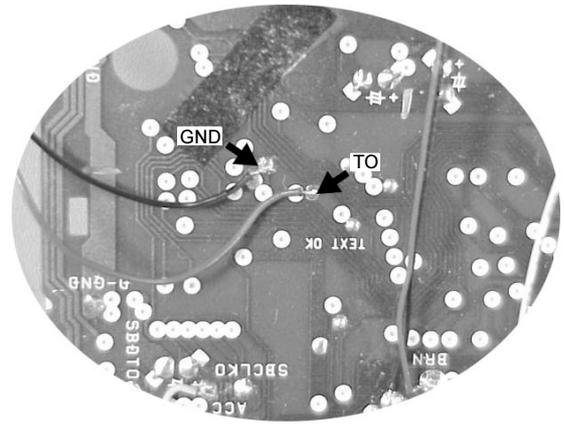


Fig-8

- 3) Connect the wires as follows (Refer to Fig-9);
  - Connect wire for +12 V power to BACK UP of ICP601 by soldering.
  - Connect ICP601 and ACC pattern land by soldering a wire.
  - Connect GND by soldering a wire.
  - Connect the +12 V power to the ACC/BACK UP wire and connect ground (-) to the GROUND wire of the connector (Wires to be used for connection are not supplied.)

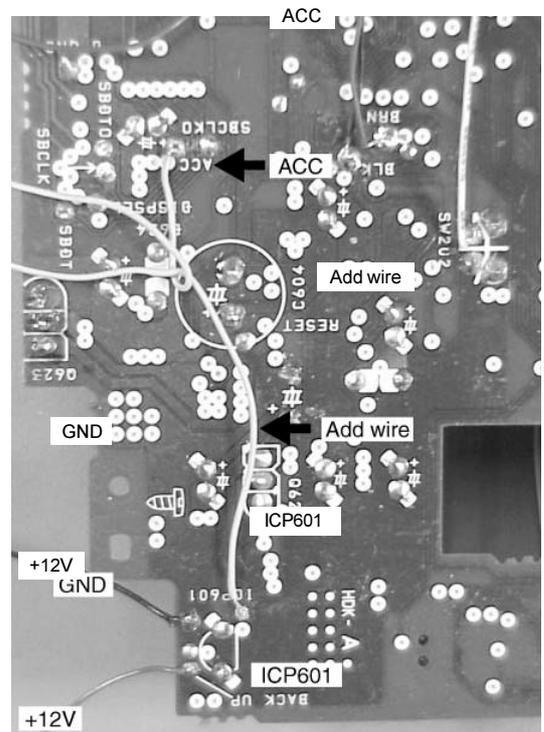


Fig-9

- 4) Perform the operation check (Refer to Fig-10).

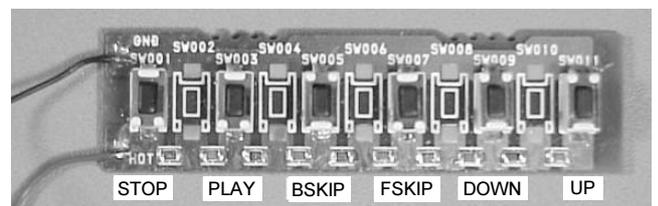


Fig-10

# ELECTRICAL MAIN PARTS LIST

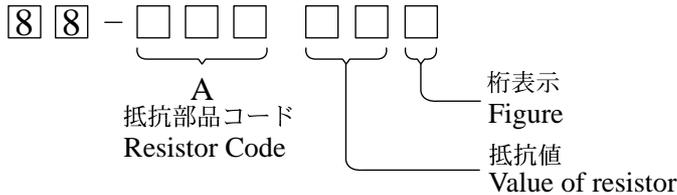
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
<b>IC</b>				C202	87-016-669-080		C-CAP,S 0.1-25 K B
	87-A20-892-010		C-IC,CXD2588R	C251	87-010-197-080		C-CAP,S 0.01-25 KB
	87-A21-467-010		C-IC,CXA2581N	C252	87-012-140-080		C-CAP,S 470P-50 J CH
	8Z-KM3-692-010		C-IC,CXP84632-160Q	C301	87-010-552-040		CAP,E 22-16 GAS
	87-A21-158-040		C-IC,TC74HC365AF	C302	87-010-552-040		CAP,E 22-16 GAS
	87-017-888-080		IC,NJM4558MD	C303	87-010-318-080		C-CAP,S 47P-50 CH
	87-A20-574-010		C-IC,SM5902AF<EX108>	C304	87-010-318-080		C-CAP,S 47P-50 CH
	87-A21-160-040		C-IC,MSM5117400C-60SJ<EX108>	C305	87-015-696-040		CAP,E 2.2-50 SRA
	87-A21-161-040		C-IC,BA6392FP	C306	87-015-696-040		CAP,E 2.2-50 SRA
	87-A21-162-040		C-IC,BA6247FP	C307	87-010-178-080		CHIP CAP 1000P
	87-A21-102-040		C-IC,S-80828ANNP-EDR-T2	C308	87-010-178-080		CHIP CAP 1000P
	87-A21-190-040		C-IC,PQ20WZ1U	C321	87-010-555-040		CAP,E 100-10
<b>TRANSISTOR</b>				C322	87-016-669-080		C-CAP,S 0.1-25 K B
	87-A30-248-040		C-TR,2SB1197KQ	C323	87-010-550-040		CAP,E 100-6.3 GAS
	89-110-372-080		TR,2SA1037KR	C324	87-016-669-080		C-CAP,S 0.1-25 K B
	87-026-648-080		C-TR,UPA608T	C325	87-010-550-040		CAP,E 100-6.3 GAS
	89-327-125-080		CHIP TR,2SC2712GR	C401	87-A10-711-080		C-CAP,E 100-6.3 M MF<EX108>
	87-A30-272-040		C-TR,DTA124EKA	C402	87-016-669-080		C-CAP,S 0.1-25 KB<EX108>
	87-A30-273-040		C-TR,DTC124EKA	C403	87-016-669-080		C-CAP,S 0.1-25 KB<EX108>
	87-A30-274-040		C-TR,2SD1622S-TD	C404	87-010-178-080		CHIP CAP 1000P<EX108>
	87-A30-317-080		TR,2SA1702	C452	87-016-669-080		C-CAP,S 0.1-25 KB<EX108>
	89-423-952-010		TR,2SD2395E	C501	87-010-555-040		CAP,E 100-10 GAS
	87-A30-371-040		C-TR,2SD1623	C503	87-016-669-080		C-CAP,S 0.1-25 K B
	87-A30-448-040		C-TR,DTA123JK<EX108>	C505	87-010-178-080		CHIP CAP 1000P
<b>DIODE</b>				C506	87-A11-257-010		CAP,E 470U-10M
	87-A40-250-040		CHIP-DIODE,DAN217	C551	87-010-555-040		CAP,E 100-10 M 5L
	87-A40-196-080		C-ZENER,UDZ6.2B	C552	87-A11-257-010		CAP,E 470U-10M
	87-020-331-080		CHIP-DIODE,DAN202K	C553	87-016-669-080		C-CAP,S 0.1-25 K B
	87-A40-524-040		C-DIODE,1SR154-400	C554	87-016-669-080		C-CAP,S 0.1-25 K B
	87-070-136-080		ZENER,MTZJ5.1B	C555	87-016-669-080		C-CAP,S 0.1-25 K B
	87-A40-437-080		ZENER,MTZJ4.3B	C556	87-016-669-080		C-CAP,S 0.1-25 K B
<b>MAIN C.B</b>				C601	87-010-552-040		CAP,E 22-16 GAS
C102	87-010-499-040		CAP,E 22-6.3 GAS	C602	87-A10-368-080		C-CAP,S 2.2-10 Z F
C103	87-A12-154-010		CAP,E 470-4 MA GAS	C603	87-010-552-040		CAP,E 22-16 GAS
C104	87-016-669-080		C-CAP,S 0.1-25 K B	C604	87-010-782-010		CAP,DL 0.047F-5.5 Z 70
C105	87-016-669-080		C-CAP,S 0.1-25 K B	C605	87-016-669-080		C-CAP,S 0.1-25 K B
C106	87-016-669-080		C-CAP,S 0.1-25 K B	C606	87-A10-368-080		C-CAP,S 2.2-10 Z F
C107	87-010-184-080		C-CAP,S 3300P-50 KB	C621	87-010-552-040		CAP,E 22-16 GAS
C108	87-016-526-080		C-CAP,S 0.47-16 BK	C622	87-010-555-040		CAP,E 100-10 M 5L
C109	87-012-156-080		C-CAP,S 220P-50 CH	C623	87-010-555-040		CAP,E 100-10 M 5L
C110	87-010-184-080		CHIP CAPACITOR 3300P(K)	C624	87-010-260-080		CAP,E 47-25 M 11L SME
C111	87-010-992-080		C-CAP,S 0.047-25 B	C625	87-016-669-080		C-CAP,S 0.1-25 K B
C112	87-016-669-080		C-CAP,S 0.1-25 K B	C626	87-016-044-040		CAP,E 100-16 GAS
C115	87-012-154-080		C-CAP,S 150P-50 CH	C631	87-010-555-040		CAP,E 100-10 M 5L
C116	87-012-154-080		C-CAP,S 150P-50 CH	C632	87-010-552-040		CAP,E 22-16 M 5L
C117	87-010-176-080		C-CAP,S 680P-50 SL	C901	87-010-197-080		C-CAP,S 0.01-25 K B C2012
C118	87-010-176-080		C-CAP,S 680P-50 SL	C902	87-016-669-080		C-CAP,S 0.1-25 K B
C151	87-A10-711-080		C-CAP,E 100-6.3 M MF	CN101	87-A61-155-080		C-CONN,30P H XF2H-3015-1
C152	87-016-669-080		C-CAP,S 0.1-25 K B	FC101	8Z-KM3-674-010		FF-CABLE, 30P 0.5 145MM-C
C153	87-A10-711-080		C-CAP,E 100-6.3 M MF	FC102	8Z-KM3-608-010		F-CABLE,2P (SENS KM3)
C155	87-016-669-080		C-CAP,S 0.1-25 K B	HL201	8Z-KM1-232-010		HLDR,LED
C156	87-016-669-080		C-CAP,S 0.1-25 K B	ICP601	87-A91-337-080		PROTECTOR,IC ICP-N75
C157	87-012-156-080		C-CAP,S 220P-50 CH	L101	87-A50-536-080		C-COIL, 10UH K LQH3C24
C158	87-010-992-080		C-CAP,S 0.047-25 B	L151	87-A50-536-080		C-COIL,10UH K LQH3C24
C159	87-012-156-080		C-CAP,S 220P-50 CH	L152	87-A50-536-080		C-COIL,10UH K LQH3C24
C161	87-016-669-080		C-CAP,S 0.1-25 K B	L201	87-A50-536-080		C-COIL,10UH K LQH3C24
C162	87-A12-031-080		C-CAP,E 33-10 M MF	L301	87-A50-536-080		C-COIL,10UH K LQH3C24
C165	87-016-669-080		C-CAP,S 0.1-25 KB	L401	87-A50-536-080		C-COIL,10UH K LQH3C24<EX108>
C166	87-016-669-080		C-CAP,S 0.1-25 KB	L501	87-A50-536-080		C-COIL,10UH K LQH3C24
C170	87-016-669-080		C-CAP,S 0.1-25 KB<EX108>	L551	87-A50-536-080		C-COIL,10UH K LQH3C24
C171	87-010-500-040		CAP-E,33-4 M 5L SRE<EX108>	LED201	87-070-288-010		LED,GL380
C201	87-016-669-080		C-CAP,S 0.1-25 K B	M801	87-A91-054-010		MOT,FF-050SK
				PS201	87-A90-244-010		SNSR,GPLS94
				SW201	87-A91-155-010		SW,TACT SKHHLQ
				SW202	87-036-110-010		SW,MICRO SPPB62
				SW203	87-036-110-010		SW,MICRO SPPB62
				SW204	87-036-312-080		SW PUSH ESE102MH4-Q
				X101	87-A70-163-080		C-VIB,CER 16.93MHZ CSTCVMXJ0C4
				X200	87-A70-200-080		C-VIB,CER 12MHZ CSTCV12MTJ0C4

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
SENS C.B			
PD201	87-026-674-010	P-TR,PT4850F	
DIN C.B			
J901	8Z-KM3-638-010	JACK,DIN 13 P TCS5125-014151	
FLEX DIN C.B			
	8Z-KM3-617-010	PWB,FLEX DIN (ZKM3)-C	
SW C.B			
SW801	87-036-269-080	C-SW,PUSH 1-1-1 ESE102MH2	
SW802	87-036-312-080	C-SW,PUSH ESE102MH4-Q	
W803	8Z-KM3-625-010	F-CABLE,4P (SWITCH)	
LED C.B			
CNA800	8Z-KM3-623-210	CONN ASSY,2P (LED)	
CON803	87-009-863-010	CONN,2P WHT ZH	
LED801	87-A40-319-080	C-LED,LT1E40A GRN	
LED802	87-A40-320-080	C-LED,LT1H40A Y	
LED803	87-A40-319-080	C-LED,LT1E40A GRN	

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
CONNECT C.B			
CON801	87-A61-155-080	C-CONN,30P H XF2H-3015-1	
CON802	87-A61-240-080	C-CONN,16P H FLZ-RS1-TB	
M802	87-A91-054-010	MOT,FF-050SK	
M803	87-A91-054-010	MOT,FF-050SK	
M804	87-A90-926-010	MOT,RF-3L0PA	
LIMIT C.B			
SW803	87-036-312-080	C-SW,PUSH ESE102MH4-Q	
W804	8Z-KM3-624-010	F-CABLE,2P (LIMIT)	
FLEX PICK UP C.B			
	8Z-KM4-631-010	PWB,FLEX PICK UP (AK)	

○チップ抵抗部品コード/CHIP RESISTOR PART CODE

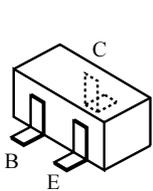
チップ抵抗部品コードの成り立ち  
Chip Resistor Part Coding



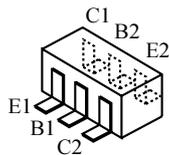
チップ抵抗  
Chip resistor

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

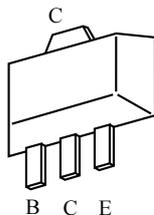
TRANSISTOR ILLUSTRATION



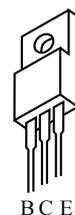
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2SB1197KQ  
2SC2712GR  
2SD1623  
DTA124EKA  
DTA123JKA  
DTC124EKA



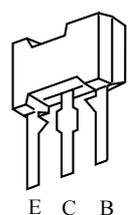
UPA608T



2SD1622S



2SD2395E



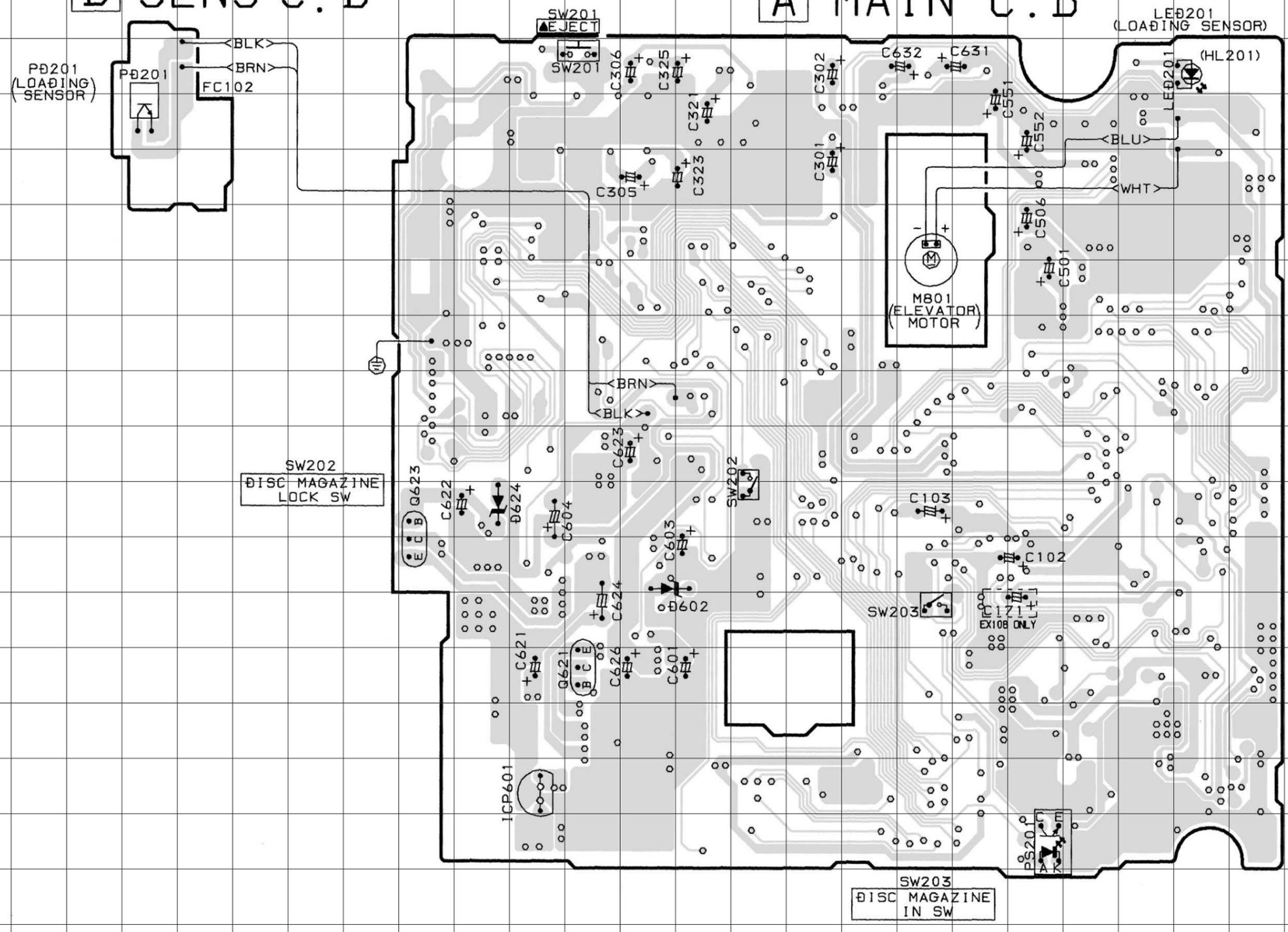
2SA1702

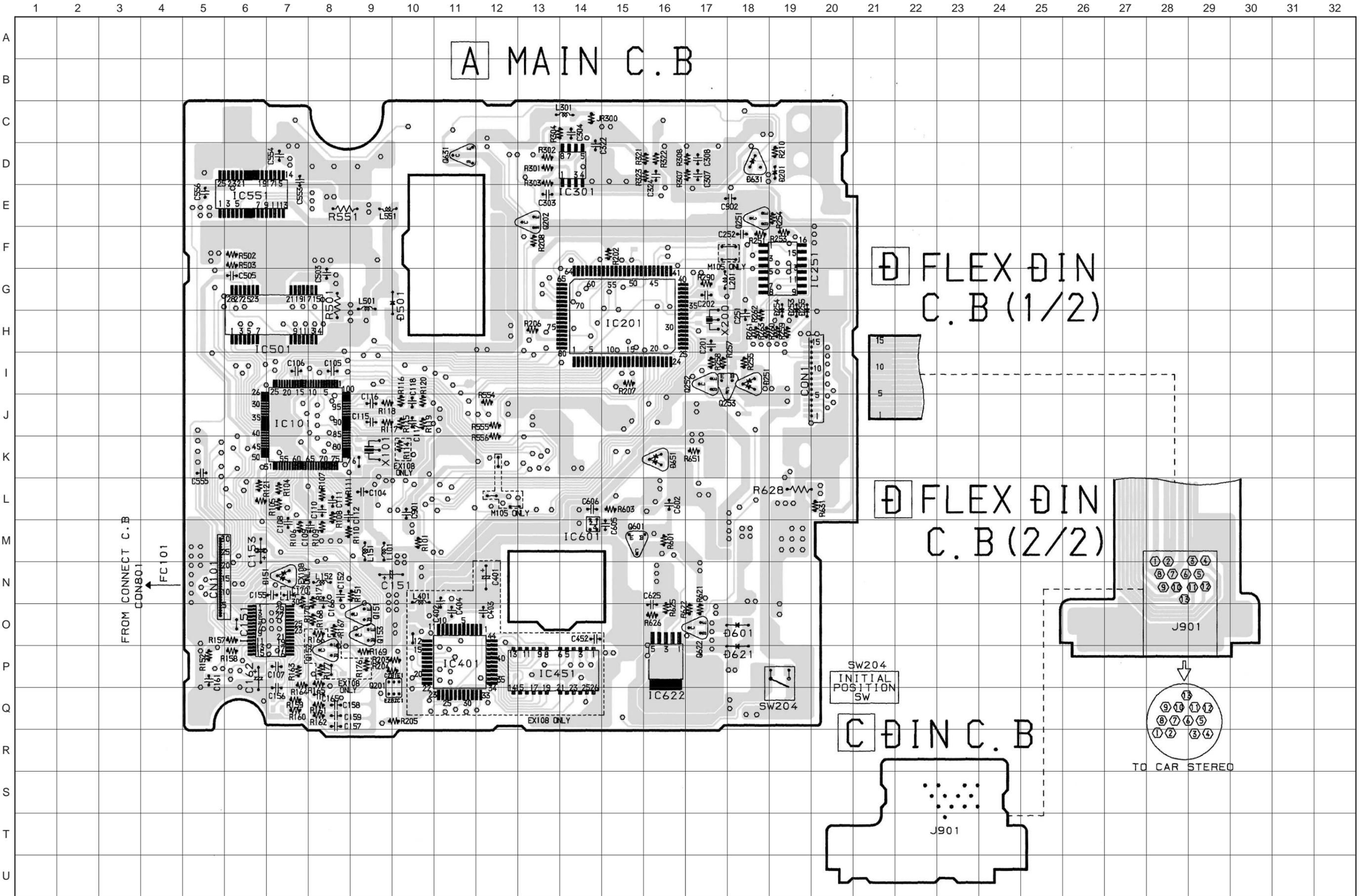
32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

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**B** SENS C.B

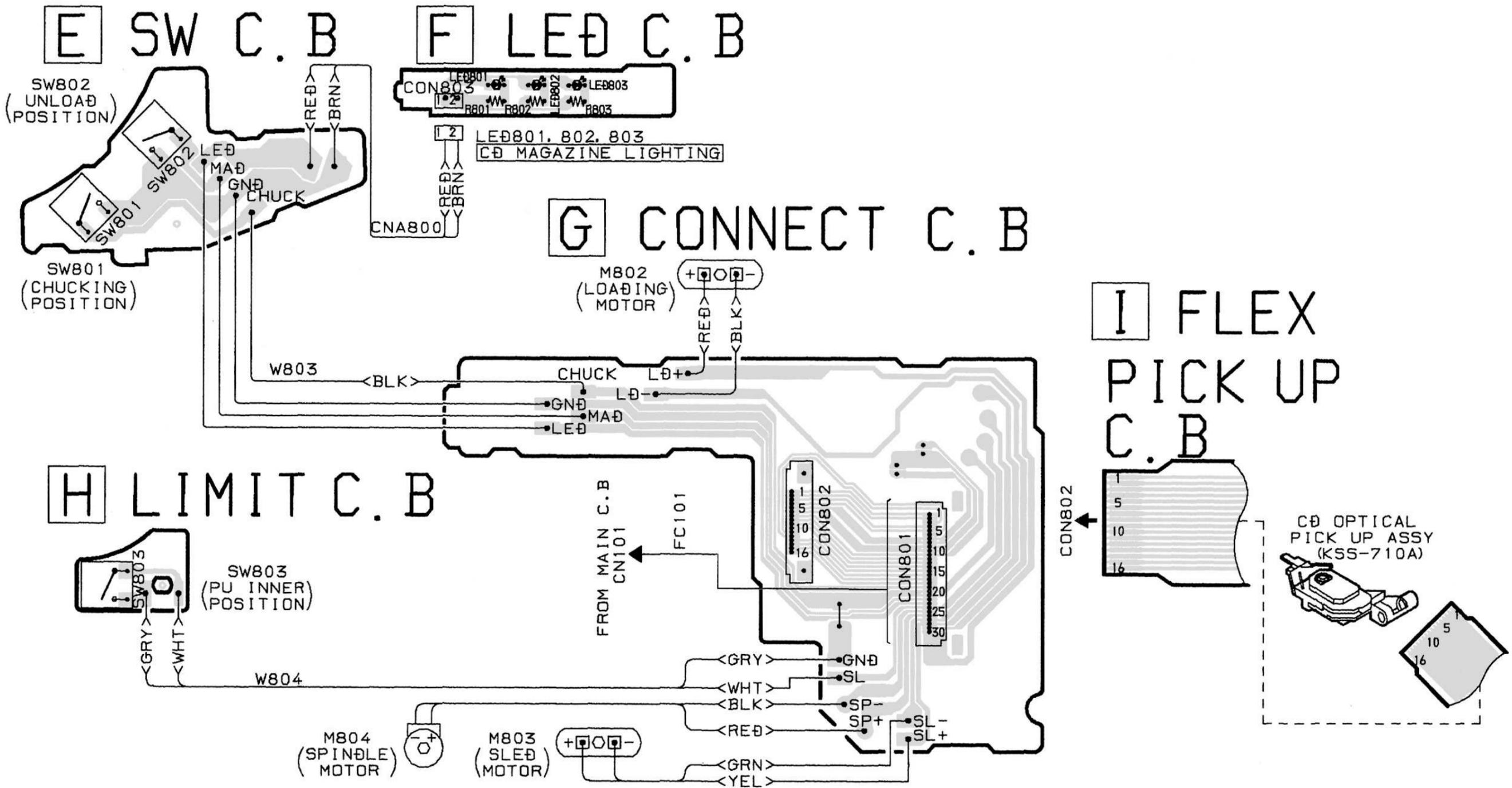
**A** MAIN C.B



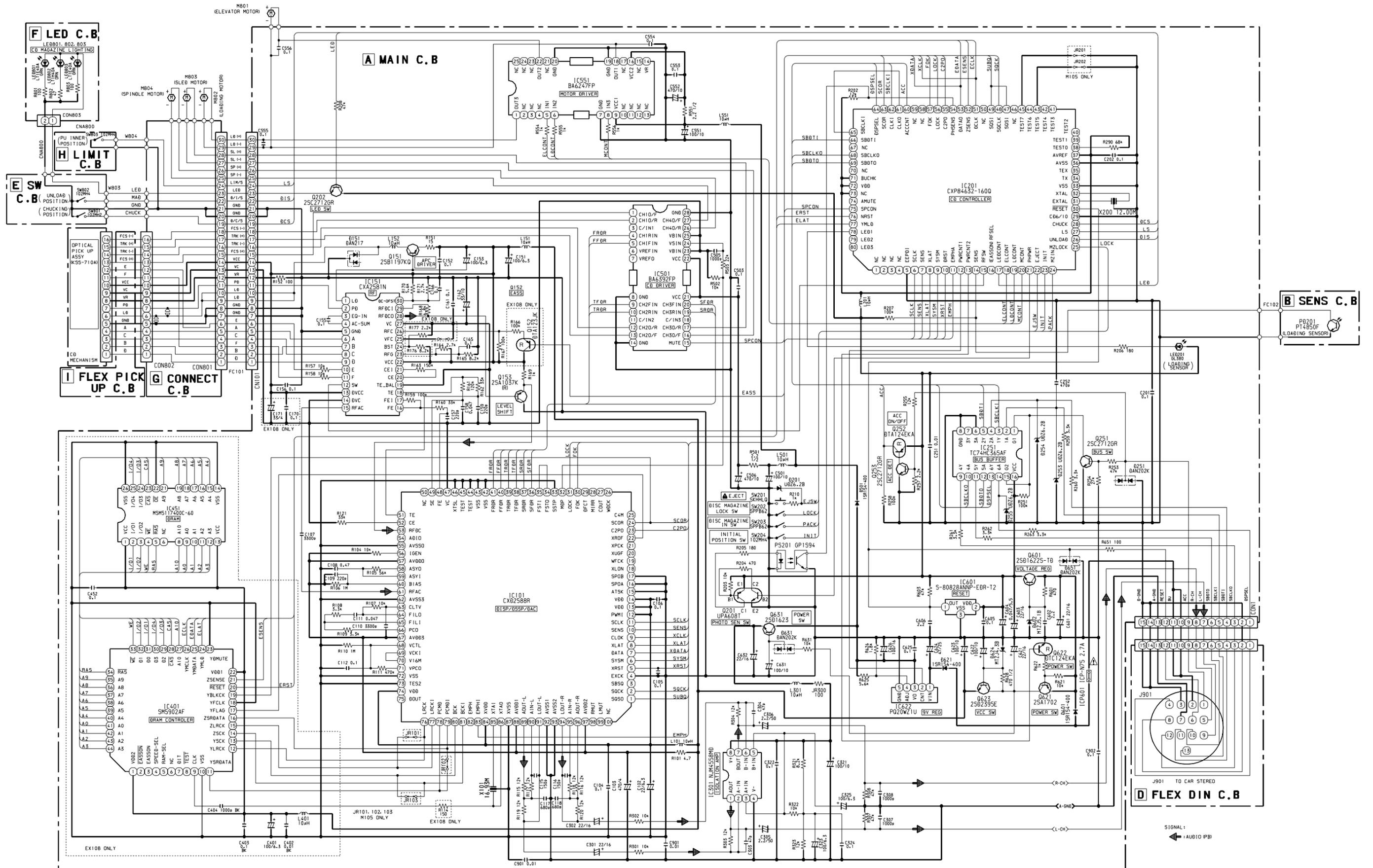


32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
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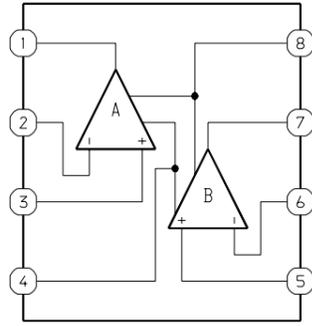


SCHEMATIC DIAGRAM

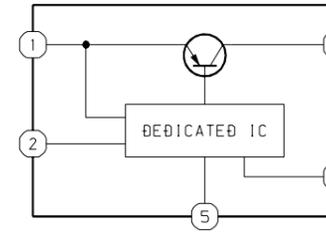


IC BLOCK DIAGRAM

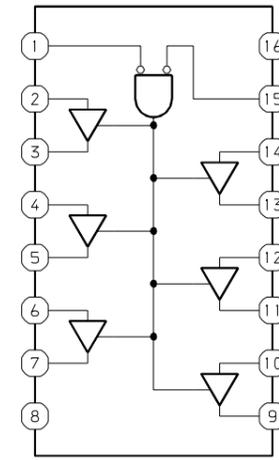
IC, NJM4558MD



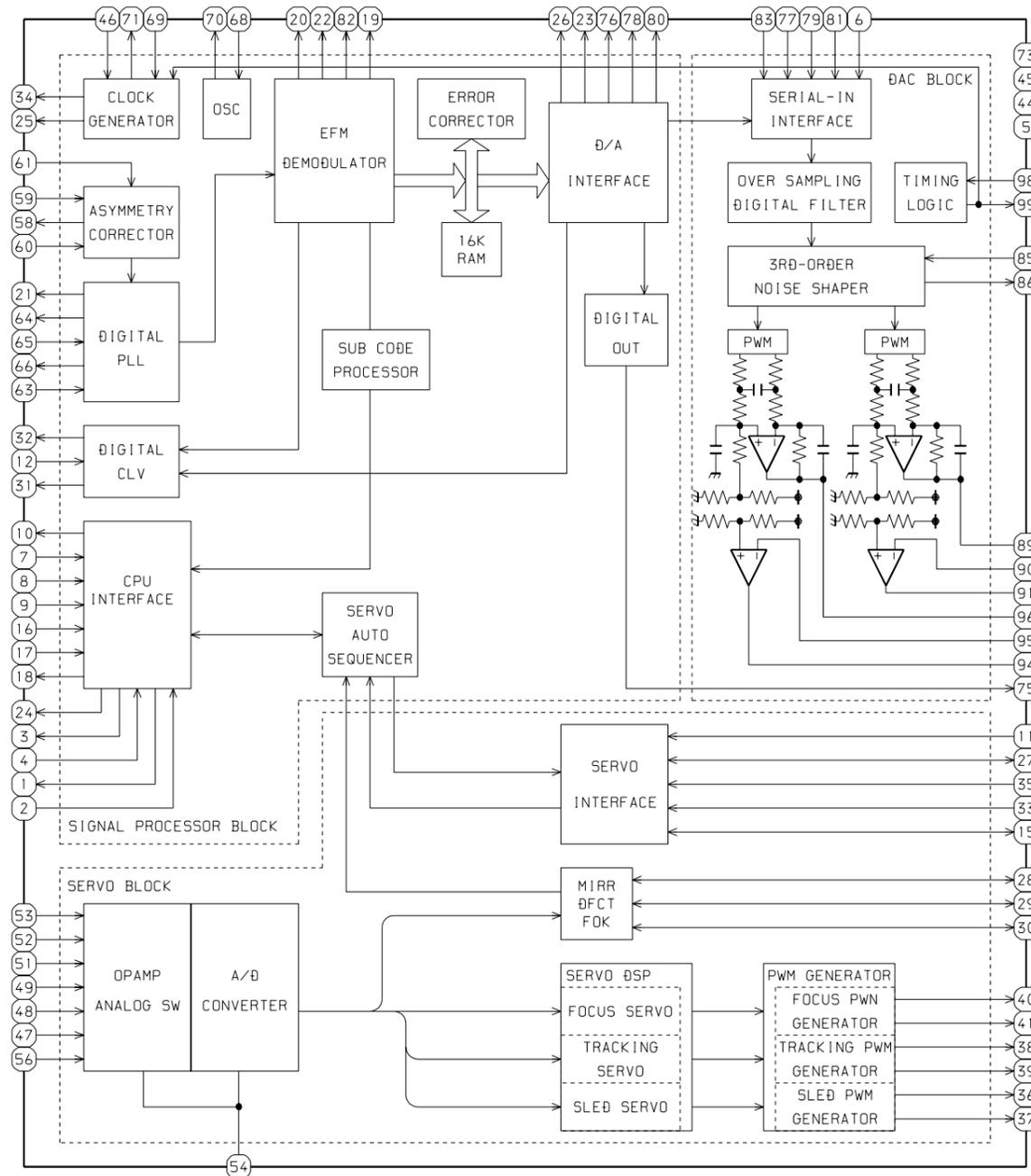
IC, PQ20WZ1U



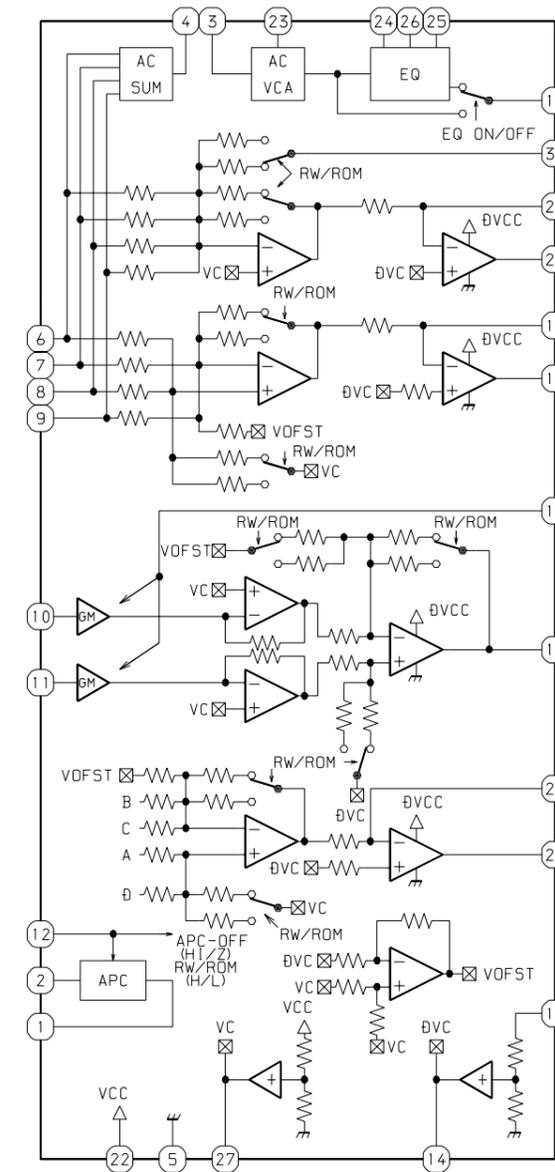
IC, TC74HC365AF



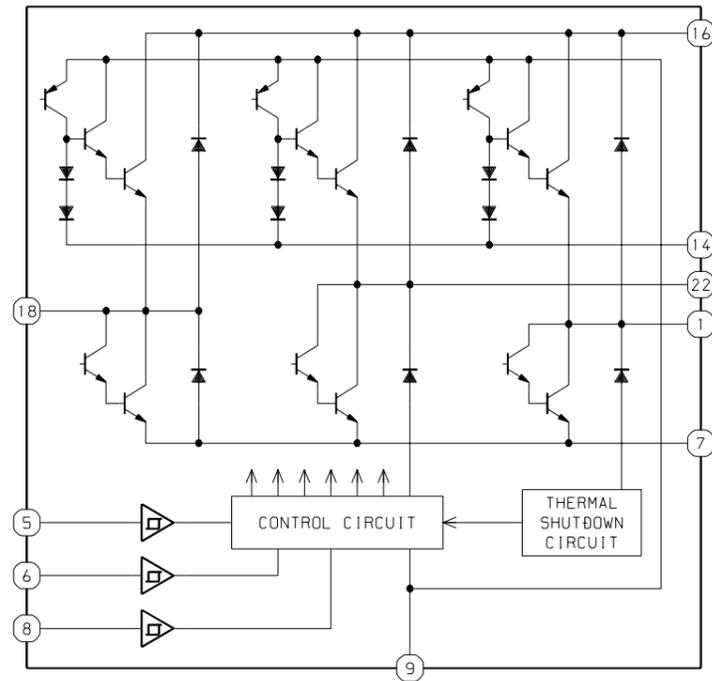
IC, CXD2588R



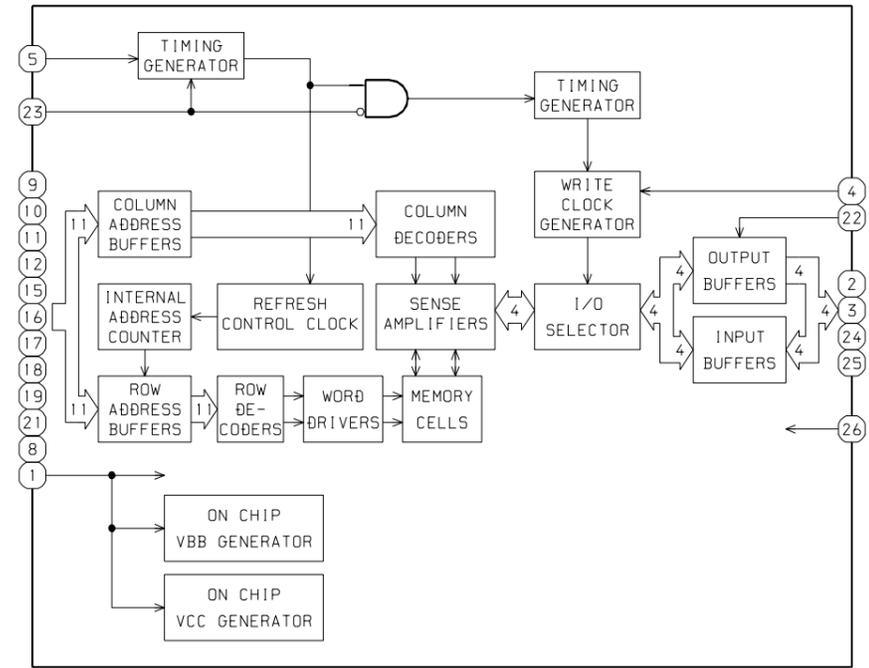
IC, CXA2581N



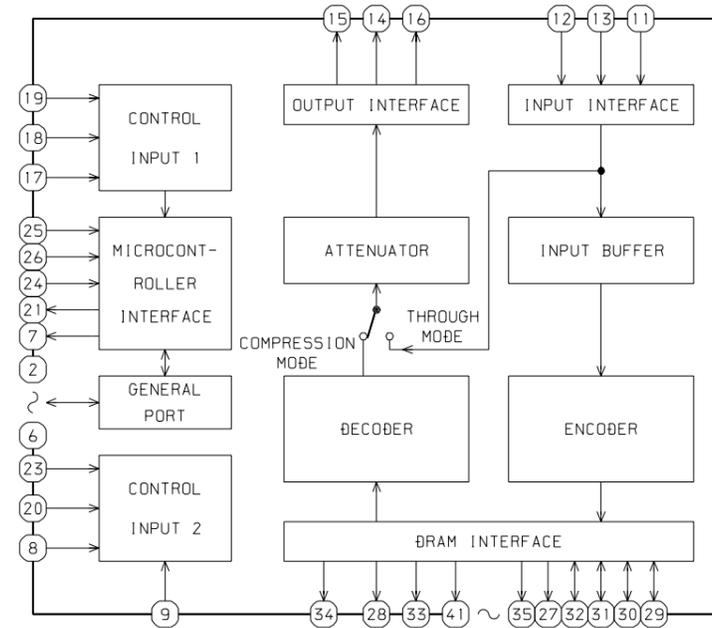
IC, BA6247FP



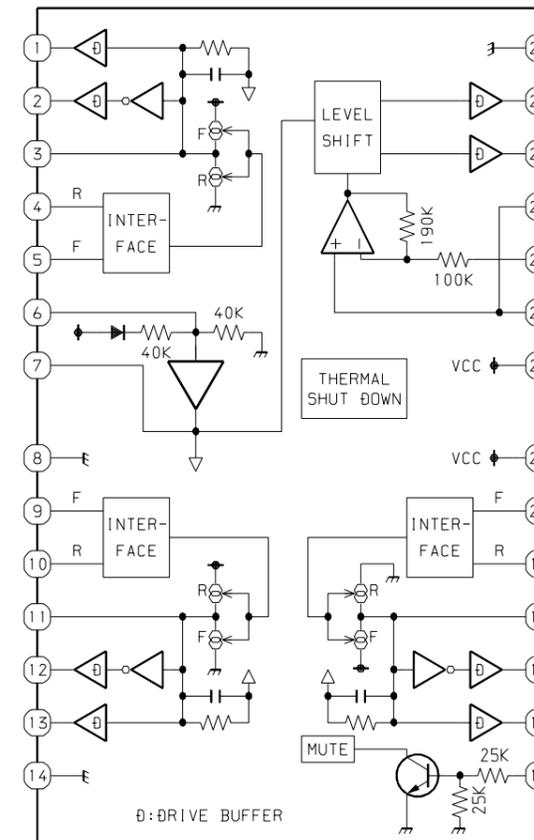
IC, MSM5117400C-60SJ



IC, SM5902AF



IC, BA6392FP



## IC DESCRIPTION

IC, CXP84632-160Q

Pin No.	Pin Name	I/O	Description
1 ~ 4	NC	–	Not connected.
5	EEPDI	–	Connected to GND.
6	SCLK	O	SENS read clock out.
7	SENS	I	SENS in.
8	XLAT	O	DSP data latch out.
9	SYSM	O	DSP(DAC) system mute control. (H : MUTE).
10	DRST	O	DSP IC reset. (L : RESET).
11	EMPHA	O	DSP(DAC) DE EMPHASYS control. (H : ON).
12, 13	PWRCNT1, 2	O	POWER control out 1, 2.
14	SENS	I	DISC IN detect sensor in.
15	RFSW	O	RFAMP GAIN select out. (H : CD - RW).
16	(EASSON) RFSEL	O	RFAMP Fs select out. (x2 speed : L). (Not used).
17	LEDCONT	O	LED on / off out. (H : ON).
18	ELCONT	O	MOTOR DRIVER control out 1.
19	LDCONT	O	MOTOR DRIVER control out 2.
20	MCONT	O	MOTOR DRIVER control out 3.
21	PHPWR	O	PHOTO SENSOR ON / OFF out. (H : ON).
22	EJECT	I	EJECT SW in. (Pull 22 ~ 28 SW L : ON).
23	INIT	I	INITIAL POSITION SW in.
24	MZIN	I	DISC MAGAZINE IN SW in.
25	MZLOCK	I	DISC MAGAZINE LOCK SW in.
26	UNLOAD	I	UNLOAD POSITION SW in.
27	LS	I	PU INNER POSITION SW in.
28	CHUCK	I	CHUCKING POSITION SW in.
29	CD6/10	I	6 / 10 DISC selector. (OPEN : 6 disc). (Connected to GND).
30	RESET	–	IC RESET. (L : RESET).
31	EXTAL	–	12 MHz CLOCK.
32	XTAL	–	12 MHz CLOCK.
33	VSS	–	IC GND.
34	TX	–	Not used.
35	TEX	–	Not used.
36	AVSS	–	GND. (A/D in GND).
37	AVREF	–	VDD. (A/D in Vref).
38	TEST0	I/O	TEST MODE select (L) / TEST KEY connect.
39 ~ 42	TEST1 ~ 4	–	Not used.
43	TEST5	I	CD TEXT FUNTION select. (L : NO TEXT). (M105 only)
44	TEST6	–	Not used.
45	TEST7	I	EASS FUNCTION select. (L : NO EASS). (M105 only).
46	NC	–	Not connected.
47	SQSI	I	SUBCODE CRC flag check.
48	SQCLK	O	SUBCODE READ CLOCK out.

Pin No.	Pin Name	I/O	Description
49	SQSI	I	SUBCODE DATA in.
50	NC	–	Not connected.
51	DCLK	O	DSP / DRAM controller DATA CLOCK out.
52	ZSENS	I	DRAM controller DATA in. (EX108 only).
53	DATAO	O	DSP / DRAM controller DATA out.
54	PHSENS	I	PHOTO SENSOR in.
55	C2PO	I	C2 error flag in. (H : C2 error).
56	LOCK	I	LOCK in. (H : SPINDLE SERVO LOCK).
57	FOK	I	FOK in (H : FOCUS OK).
58, 59	NC	–	Not connected.
60	ACCNT	I	ACC CONT in. (H : ON).
61	CLKO	O	Adjust SERIAL CLOCK out.
62	CLKI	I	SERIAL CLOCK in.
63	SCOR	I	SUBCODE SYNC in.
64	DSPSEL	I	SERIAL BUS enable in.
65	SBCLKI	I	Adjust SERIAL CLOCK in.
66	SBDTI	I	SERIAL DATA in.
67	NC	–	Not connected.
68	SBCLKO	O	SERIAL CLOCK out.
69	SBDTO	O	SERIAL DATA out.
70	NC	–	Not connected.
71	BUCHK	I	Connected to VDD.
72	VDD	–	IC VDD.
73	NC	–	Connected to VDD.
74	AMUTE	–	Not used.
75	SPCON	O	MOTOR DRIVER STANDBY control. (L : MUTE).
76	NRST	O	DRAM controller IC RESET. (L : RESET). (EX108 only).
77	YMLD	O	DRAM controller DATA LATCH out. (EX108 only).
78	LED1	O	DISC detect sensor LED on / off. (L : ON).
79, 80	LED2, 3	–	Not used.

# VOLTAGE CHART

IC101,CXD2588R

PIN NO.	CD x 1	CD x 2	RW x 1
1	DATA LINE	DATA LINE	DATA LINE
2	4.56	4.56	4.56
3	0.11	0.11	0.11
4	0	0	0
5	4.60	4.60	4.60
6	0	0	0
7	DATA LINE	DATA LINE	DATA LINE
8	4.59	4.59	4.59
9	4.57	4.57	4.57
10	0.03	0.03	0.03
11	4.61	4.61	4.61
12~14	4.06	4.06	4.06
15~18	0	0	0
19~20	2.03	2.03	2.03
21	1.92	1.92	1.92
22	4.06	4.06	4.06
23	0	0	0
24	0.05	0.05	0.05
25	1.92	1.92	1.92
26	2.00	2.00	2.00
27~28	0.01	0.01	0.01
29	0.04	0.04	0.04
30~31	4.06	4.06	4.06
32	2.25	2.25	2.25
33	0	0	0
34~35	2.25	2.25	2.25
36~41	DATA LINE	DATA LINE	DATA LINE
42~46	0	0	0
47	2.02	2.02	2.02
48	1.98	1.98	1.98
49~50	0	0	0
51	DATA LINE	DATA LINE	DATALINE
52	2.02	2.02	2.02
53	2.79	2.79	2.79
54	1.95	1.95	1.95
55	0	0	0
56	1.73	1.73	1.73
57	3.92	3.92	3.92
58	1.95	1.95	1.95
59	1.96	1.96	1.96
60	0.80	0.80	0.80

PIN NO.	CD x 1	CD x 2	RW x 1
61	1.96	1.96	1.96
62	0	0	0
63~64	2.04	2.04	2.04
65~66	1.96	1.96	1.96
67	3.92	3.92	3.92
68	0	0	0
69~70	1.63	1.63	1.63
71	0.01	0.01	0.01
72~73	0	0	0
74	4.06	4.06	4.06
75	0.01	0.01	0.01
76	2.02	2.02	2.02
77~78	2.03	2.03	2.03
79	1.35	1.35	1.35
80	1.96	1.96	1.96
81	2.00	2.00	2.00
82	4.06	4.06	4.06
83	4.60	4.60	4.60
84	4.06	4.06	4.06
85	0	0	0
86	1.98	1.98	1.98
87	0	0	0
88	3.91	3.91	3.91
89	0	0	0
90~91	1.62	1.62	1.62
92~93	0	0	0
94	1.61	1.61	1.61
95	1.62	1.62	1.62
96	1.63	1.63	1.63
97	3.93	3.93	3.93
98~99	4.06	4.06	4.06
100	0	0	0

IC151,CXA2581N

PIN NO.	CD x 1	CD x 2	RW x 1
1	2.57	2.57	2.57
2	0.158	0.158	0.158
3	2.03	2.03	2.03
4	2.10	2.10	2.10
5	0	0	0
6	2.15	2.15	2.15
7	2.14	2.14	2.14
8~9	2.13	2.13	2.13
10~11	2.04	2.04	2.04
12	0	0	4.61
13	4.06	4.06	4.06
14	2.04	2.04	2.04
15	2.19	2.19	2.19
16	2.00	2.00	2.00
17	2.04	2.04	2.04
18	1.95	1.95	1.95
19	2.04	2.04	2.04
20	2.02	2.02	2.02
21	2.04	2.04	2.04
22	4.06	4.06	4.06
23	2.97	2.97	2.97
24	2.43	2.43	2.43
25	1.57	1.57	1.57
26	2.80	2.77	2.77
27	2.04	2.04	2.04
28	2.19	2.19	2.19
29	2.04	2.04	2.04
30	1.54	1.54	1.54

IC201,CXP84632-160Q

PIN NO.	CD x 1	CD x 2	RW x 1
1	0	0	0
2~3	4.64	4.64	4.64
4~5	0	0	0
6	4.61	4.61	4.61
7	0.03	0.03	0.03
8	4.59	4.59	4.59
9	0	0	0
10~11	4.59	4.59	4.59
12~13	4.57	4.57	4.57

PIN NO.	CD x 1	CD x 2	RW x 1
14	4.59	4.59	4.59
15	0	0	4.6
16	4.63	0.09	4.63x1/0.09x2
17	4.62	4.62	4.62
18~21	0	0	0
22~23	4.59	4.59	4.59
24~25	0	0	0
26~27	4.59	4.59	4.59
28~29	0	0	0
30	4.16	4.16	4.16
31	2.27	2.27	2.27
32	2.43	2.43	2.43
33	0	0	0
34	4.64	4.64	4.64
35~36	0	0	0
37	4.65	4.65	4.65
38	4.62	4.62	4.62
39~41	0	0	0
42	4.60	0	0
43	4.60	4.60	4.60
44	4.60	0	0
45~46	4.60	4.60	4.60
47	DATA LINE	DATA LINE	DATA LINE
48	4.56	4.56	4.56
49	DATA LINE	DATA LINE	DATA LINE
50	0	0	0
51	4.57	4.57	4.57
52~53	DATA LINE	DATA LINE	DATA LINE
54	4.64	4.64	4.64
55	0	0	0
56~57	4.06	4.06	4.06
58~59	0	0	0
60	4.65	4.65	4.65
61	4.64	4.64	4.64
62	0	0	0
63	0.05	0.05	0.05
64	DATA LINE	DATA LINE	DATA LINE
65	4.64	4.64	4.64
66~67	0	0	0
68	4.64	4.64	4.64

PIN NO.	CD x 1	CD x 2	RW x 1
69	DATA LINE	DATA LINE	DATA LINE
70	0	0	0
71~73	4.65	4.65	4.65
74	0	0	0
75	4.59	4.59	4.59
76~77	4.63	4.63	4.63
78	4.00	4.00	4.00
79~80	0	0	0

IC251, TC74HC365AF

PIN NO.	CD x 1	CD x 2	RW x 1
1~8	0	0	0
9~10	4.64	4.64	4.64
11~14	DATA LINE	DATA LINE	DATALINE
15	0	0	0
16	4.65	4.65	4.65

IC301, NJM4558MD

PIN NO.	CD x 1	CD x 2	RW x 1
1~3	6.30	6.30	6.30
4	0	0	0
5~7	6.30	6.30	6.30
8	10.65	10.65	10.65

IC401, SM5902AF<EX108 ONLY>

PIN NO.	CD x 1	CD x 2	RW x 1
1	4.06	4.06	4.06
2~6	4.00	4.00	4.00
7	0	0	0
8	4.00	4.00	4.00
9	1.68	1.68	1.68
10	0	0	0
11	2.03	2.03	2.03
12	2.02	2.02	2.02
13	1.95	1.95	1.95
14	2.00	2.00	2.00
15	2.02	2.02	2.02
16	1.34	1.34	1.34
17	4.05	4.05	4.05
18	0	0	0
19	0.05	0.05	0.05
20	4.62	4.62	4.62
21	DATA LINE	DATA LINE	DATA LINE
22	4.05	4.05	4.05
23	0	0	0

PIN NO.	CD x 1	CD x 2	RW x 1
24	4.62	4.62	4.62
25	DATA LINE	DATA LINE	DATA LINE
26	4.56	4.56	4.56
27~28	DATA LINE	DATA LINE	DATA LINE
29	2.03	2.03	2.03
30	2.02	2.02	2.02
31~32	2.05	2.05	2.05
33	3.51	3.51	3.51
34	3.17	3.17	3.17
35~38	DATA LINE	DATA LINE	DATA LINE
39~40	2.40	2.40	2.40
41	2.01	2.01	2.01
42	1.94	1.94	1.94
43	2.04	2.04	2.04
44	2.08	2.08	2.08

IC451, MSM5117400C-60SJ<EX108 ONLY>

PIN NO.	CD x 1	CD x 2	RW x 1
1	4.06	4.06	4.06
2~3	2.02	2.02	2.02
4	3.50	3.50	3.50
5	3.17	3.17	3.17
6	0	0	0
7	-	-	-
8	DATA LINE	DATA LINE	DATA LINE
9	2.0	2.0	2.0
10	1.94	1.94	1.94
11	2.04	2.04	2.04
12	2.07	2.07	2.07
13	4.05	4.05	4.05
14	0	0	0
15~16	2.40	2.40	2.40
17~19	DATA LINE	DATA LINE	DATA LINE
20	-	-	-
21	DATA LINE	DATA LINE	DATA LINE
22	0	0	0
23	DATA LINE	DATA LINE	DATA LINE
24	2.03	2.03	2.03
25	2.00	2.00	2.00
26	0	0	0

## IC501,BA6392FP

PIN NO.	CD x 1	CD x 2	RW x 1
1	4.45	4.45	4.45
2	5.03	5.03	5.03
3	4.48	4.48	4.48
4~5	DATA LINE	DATA LINE	DATA LINE
6	4.75	4.75	4.75
7	4.77	4.77	4.77
8	0	0	0
9~10	DATA LINE	DATA LINE	DATALINE
11	4.73	4.73	4.73
12	4.71	4.71	4.71
13	4.76	4.76	4.76
14	0	0	0
15	4.59	4.59	4.59
16	4.78	4.78	4.78
17	4.69	4.69	4.69
18	4.76	4.76	4.76
19~20	DATA LINE	DATA LINE	DATA LINE
21~22	9.90	9.90	9.90
23	2.03	2.03	2.03
24	2.22	2.03	2.03
25	2.03	2.03	2.03
26	5.02	5.02	5.02
27	4.36	4.36	4.36
28	0	0	0

## IC622,PQ20WZ1U

PIN NO.	CD x 1	CD x 2	RW x 1
1	13.10	13.10	13.10
2	4.57	4.57	4.57
3	11.11	11.11	11.11
4	2.67	2.67	2.67
5	0	0	0

## IC551,BA6247FP

PIN NO.	CD x 1	CD x 2	RW x 1
1	0.55	0.55	0.55
2~4	0	0	0
5~6	DATA LINE	DATA LINE	DATA LINE
7	0	0	0
8	DATA LINE	DATA LINE	DATA LINE
9	10.33	10.33	10.33
10~15	0	0	0
16	10.33	10.33	10.33
17	0	0	0
18	0.55	0.55	0.55
19~21	0	0	0
22	0.55	0.55	0.55
23~25	0	0	0

Q151,2SB1197KQ

PIN	CD x 1	CD x 2	RW x 1
E	3.18	3.18	3.18
C	2.18	2.18	2.18
B	2.54	2.54	2.54

Q253,2SC2712GR

PIN	CD x 1	CD x 2	RW x 1
E	0	0	0
C	0	0	0
B	0.68	0.68	0.68

Q152,DTA123JK<EX108ONLY>

PIN	CD x 1	CD x 2	RW x 1
E	4.05	4.00	4.05x1/4.00x2
C	2.77	3.96	2.77x1/3.96x2
B	4.60	0.09	4.60x1/0.09x2

Q601,2SD1622S-TD

PIN	CD x 1	CD x 2	RW x 1
E	4.65	4.65	4.65
C	13.10	13.10	13.10
B	5.23	5.23	5.23

Q153,2SA1037K(R)

PIN	CD x 1	CD x 2	RW x 1
E	2.80	2.80	2.80
C	0	0	0
B	2.19	2.19	2.19

Q621,2SA1702

PIN	CD x 1	CD x 2	RW x 1
E	13.10	13.10	13.10
C	13.05	13.05	13.05
B	0	0	0

Q201,UPA608T

PIN	CD x 1	CD x 2	RW x 1
E1	4.65	0	4.65
E2	0	4.64	0
C1	0	4.65	0
C2	4.64	0	4.64
B1	4.65	4.65	4.65
B2	0	0	0

Q622,DTC124EKA

PIN	CD x 1	CD x 2	RW x 1
E	0	0	0
C	0.13	0.13	0.13
B	4.57	4.57	4.57

Q202,2SC2712GR

PIN	CD x 1	CD x 2	RW x 1
E	2.15	2.15	2.15
C	4.63	4.63	4.63
B	2.83	2.83	2.83

Q623,2SD2395E

PIN	CD x 1	CD x 2	RW x 1
E	4.62	4.62	4.62
C	13.03	13.03	13.03
B	4.07	4.07	4.07

Q251,2SC2712GR

PIN	CD x 1	CD x 2	RW x 1
E	0	0	0
C	0	0	0
B	0.64	0.64	0.64

Q631,2SD1623

PIN	CD x 1	CD x 2	RW x 1
E	11.06	11.06	11.06
C	11.10	11.10	11.10
B	11.65	11.65	11.65

Q252,DTA124EKA

PIN	CD x 1	CD x 2	RW x 1
E	4.65	4.65	4.65
C	4.65	4.65	4.65
B	0	0	0

PD201,PT4850F

PIN	CD x 1	CD x 2	RW x 1
E	0	0	0
C	4.58	4.58	4.58

## TEST MODE

There are two methods to perform operation check using test mode. One method uses the head unit. The other method uses the repair jig. Because different operation buttons must be used for entering the operation modes and there are cases that unit does not run at all, in the method that uses the head unit, the method using the repair jig is described as follows;

### 1. How to start up the CD test mode

Connect the P.W.B Key in accordance “SERVICE JIG AND TOOLS” step (6). “How to use the repair jig - When the Control Unit (CDC/CT) is not used”.

1) While pressing the STOP button of the P.W.B Key, turn on the +12 V power of ACC/BACK UP.

### 2. How exit the CD test mode

1) Turn off the +12 V power of ACC/BACK UP.

### 3. Function description of CD test mode

Uses of the respective buttons of the P.W.B Key are described in Fig-11.

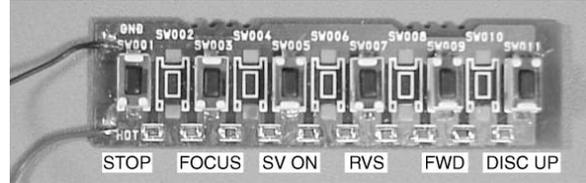
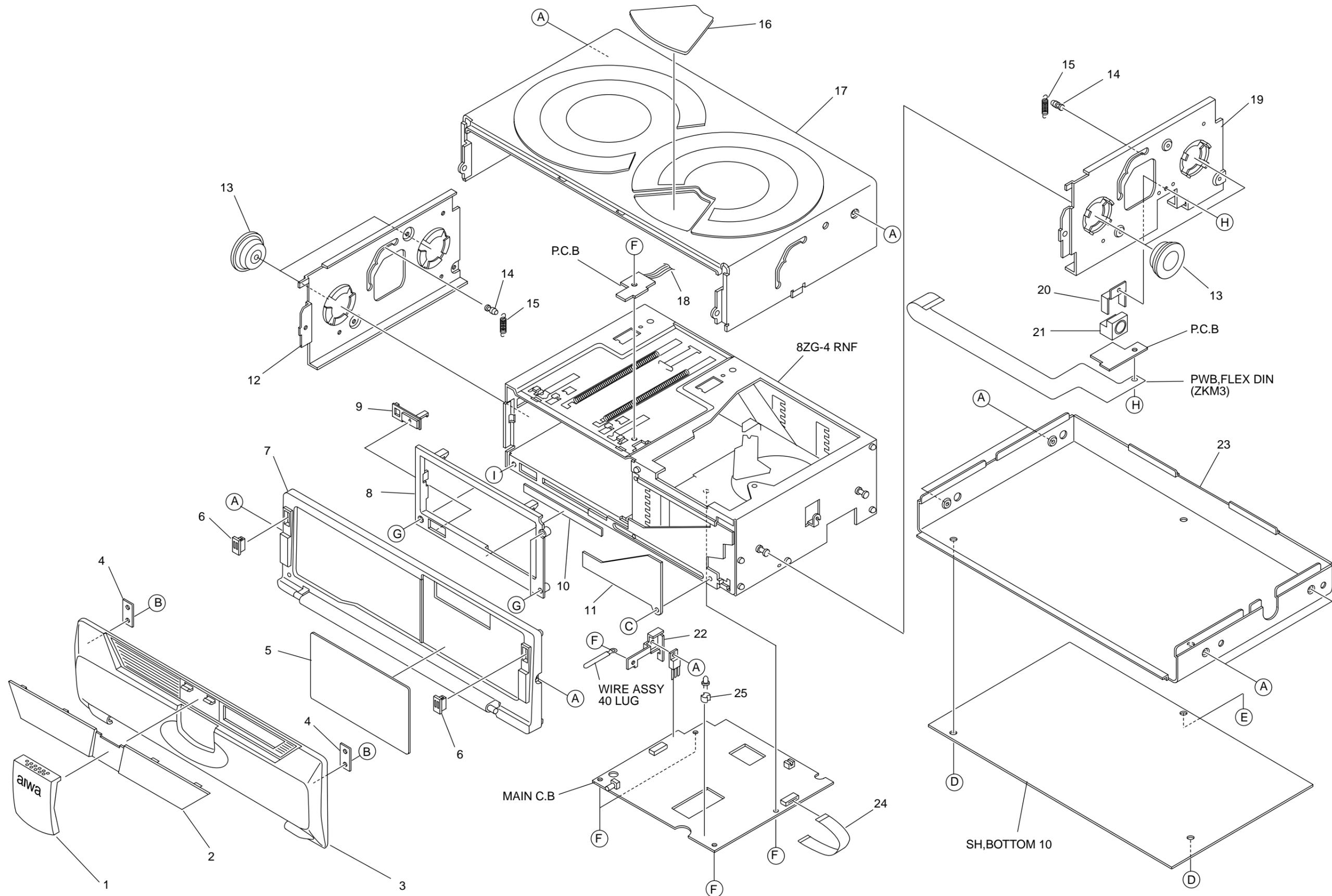


Fig-11

Mode	Operation key	Operation	Contents
Servo OFF	STOP	All servo off	
Search mode	FOCUS	Continuous focus search Pickup lens repeats full swing (Note 1)	APC circuit check Laser current measurement Focus error waveform check
Play mode	FOCUS ↓ SV ON	Normal playback	Focus servo Tracking servo CLV servo Sled servo
Sled mode	FWD RVS	Pickup moves to outer circumference Pickup moves to inner circumference	Sled servo Mechanism operation check
CD change	DISC UP	Disc unload ↓ Magazine change ↓ Disc load	Mechanism operation check (cyclic)

- During the PLAY mode, the REV, FWD and DISC UP keys are invalid. Press the STOP key once.
- When a Head Unit is connected, the Disc No. and the Track No. are shown on display in the same way as in the normal operation.

**Note 1:** If the focus search operation is continued for 10 minutes or longer, the driver IC heats up sufficiently to trigger the protection circuit, which stops the CD system. Turn off the main power and re-start operation about 10 minutes later.



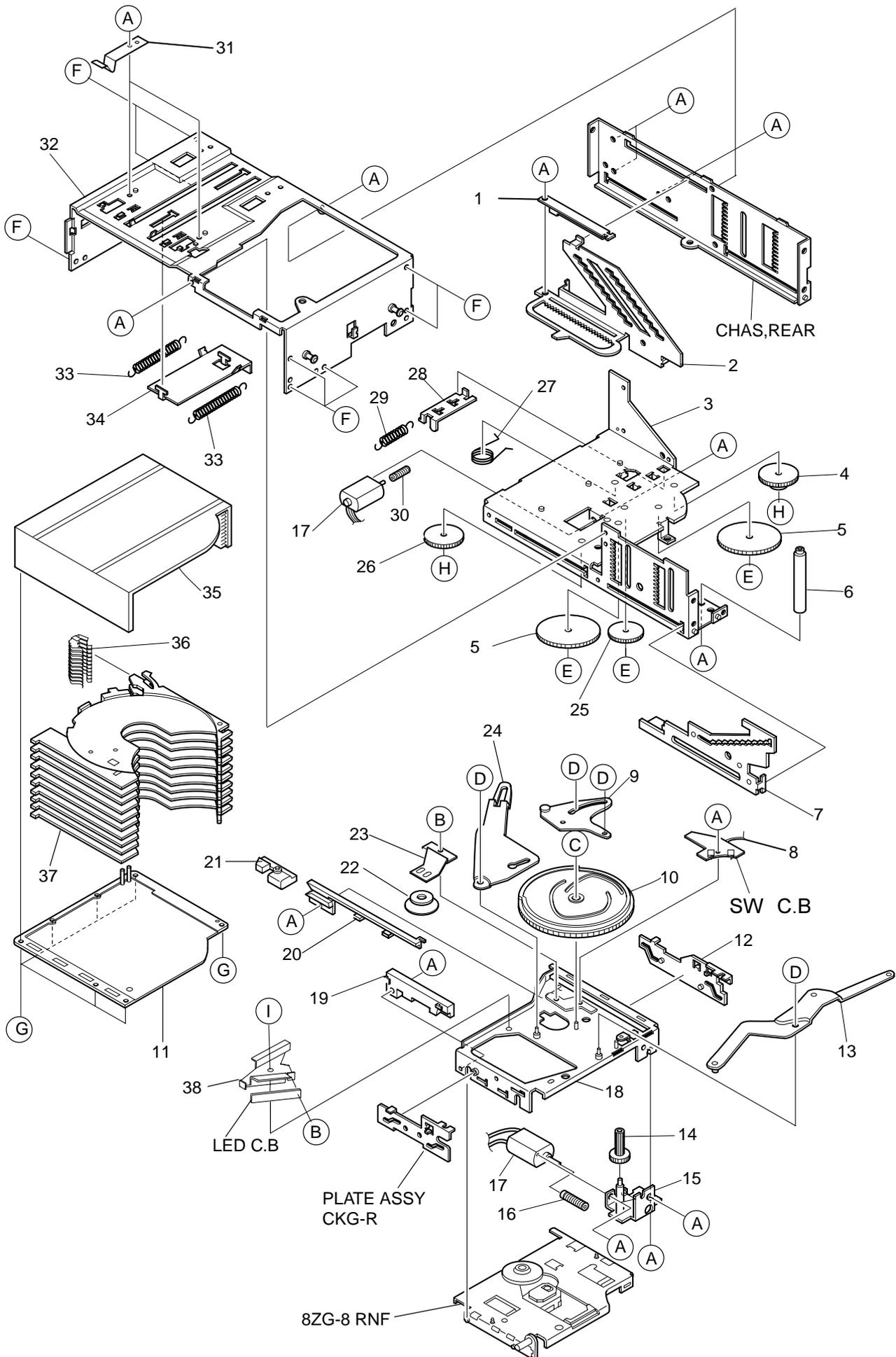
# MECHANICAL PARTS LIST 1 / 1

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION	REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
1	8Z-KM1-003-010		PANEL, FRONT 10	19	8Z-KM1-204-010		HLDR, DECK R10
2	8Z-KM1-004-010		WINDOW, FRONT 10	20	8Z-KM1-201-010		HLDR, CD
3	8Z-KM3-031-010		CABI, FRONT EX108<EX108 YJ2SF>	21	8Z-KM3-638-010		JACK, DIN 13 P TCS5125-014151
3	8Z-KM3-039-010		CABI, FRONT M105<M105 YJSF>	22	8Z-KM1-225-010		HLDR, REG
4	8Z-KM1-207-010		PLATE, MAG	23	8Z-KM3-036-110		CABI, BOTTOM 10S
5	8Z-KM3-034-010		WINDOW, DECK EX108<EX108 YJ2SF>	24	8Z-KM3-674-010		FF-CABLE, 30P 0.5 145MM -C
5	8Z-KM3-038-010		WINDOW, DECK M105<M105 YJSF>	25	8Z-KM1-232-010		HLDR, LED
6	8Z-KM1-220-010		MAGNET, HLDR ASS'Y	A	87-B10-260-010		VTT+2.6-6 W/O SLOT BLK
7	8Z-KM3-032-010		CABI, FRAME 10S	B	8Z-KM1-223-010		S-SCREW, 2-5 (BLK)
8	8Z-KM1-208-010		COVER, DECK 10	C	87-B10-255-010		U+2-3 W/O CR
9	8Z-KM1-006-110		KEY, EJECT	D	8Z-KM1-215-010		S-SCREW, M3-5-12
10	8Z-KM1-230-010		PLATE, DECK	E	8Z-KM1-224-010		S-SCREW, M3-7-11
11	8Z-KM1-217-010		COVER, PLATE 10	F	87-571-032-410		VIT+2-3
12	8Z-KM1-203-010		HLDR, DECK L10	G	87-B10-244-010		V+2-5 W/O BLK
13	88-ZG3-371-010		DMPR,	H	87-B10-245-010		U+2.6-4 W/O CR
14	8Z-KM1-202-010		SHAFT, FRAME	I	87-B10-097-010		W-M, 3.2-8-0.188 W/ADH
15	88-ZG4-542-010		SPR-E, DMPR 10				
16	8Z-KM3-033-010		WINDOW, CD S				
17	8Z-KM3-035-110		CABI, TOP 10S				
18	8Z-KM3-608-010		F-CABLE, 2P (SENS KM3)				

## COLOR NAME TABLE

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

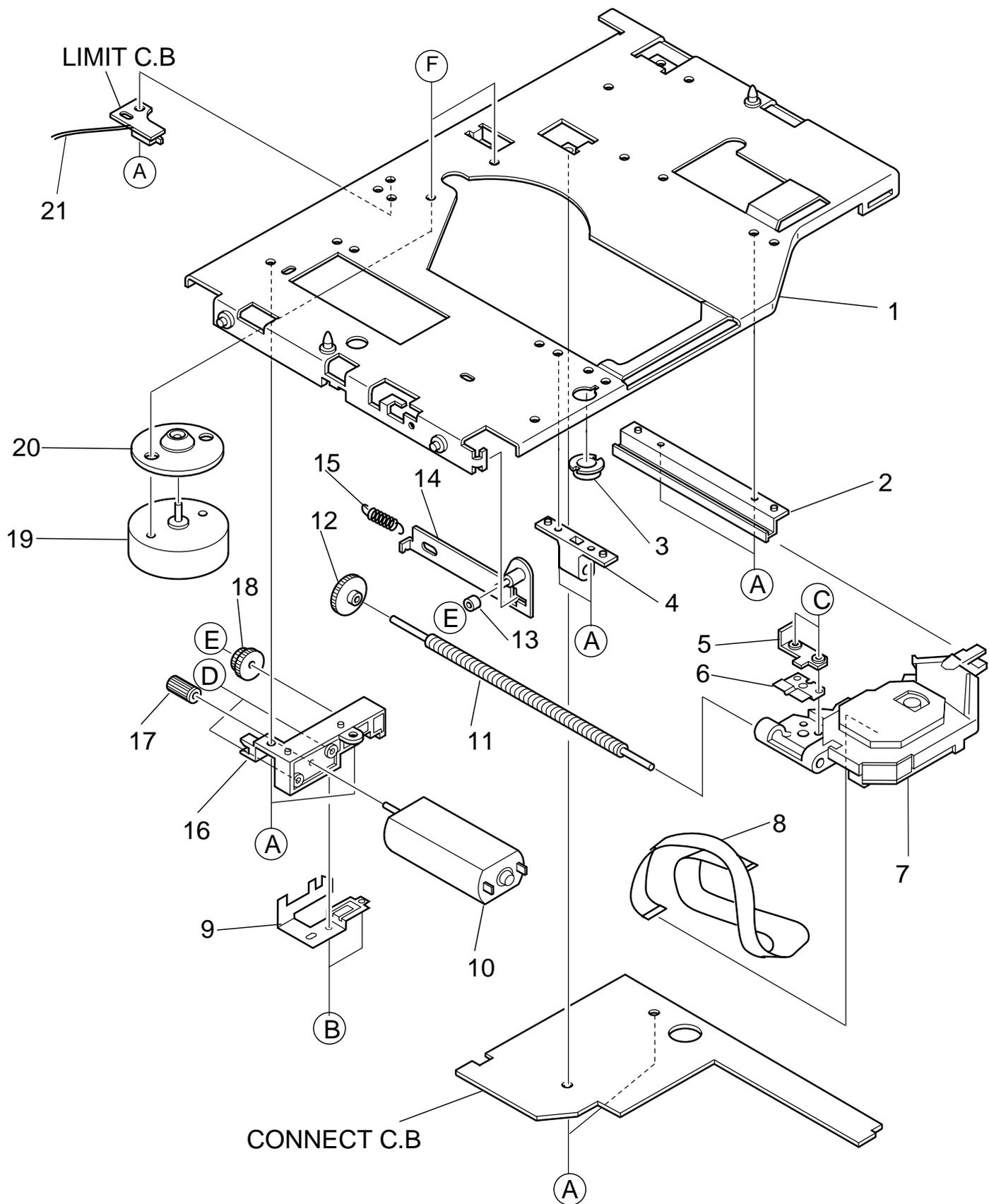
CD MECHANISM EXPLODED VIEW 1 / 2 (8ZG-4 RNF)



# CD MECHANISM PARTS LIST 1/2 (8ZG-4 RNF)

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION	REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
1	88-ZG4-521-210		PLATE, SLIT 10	26	88-ZG3-304-010		GEAR, ELV-F
2	88-ZG4-513-110		PLATE, ELV-R 10	27	88-ZG3-351-110		SPR-T, LEVER LOCK
3	88-ZG4-501-110		CHAS ASSY, MAIN 10	28	88-ZG3-274-010		PLATE, LOCK SW
4	88-ZG3-305-010		GEAR, ELV-R	29	88-ZG3-352-010		SPR-E, LOCK SW
5	88-ZG3-303-010		GEAR, ELV	30	88-ZG3-301-010		GEAR, WORM ELV
6	88-ZG4-531-010		SHAFT, GATA 10	31	88-ZG3-277-010		SPR-P, MAGAZINE
7	88-ZG4-512-110		PLATE, ELV-F 10	32	88-ZG4-506-110		CHAS ASSY, TOP 10
8	8Z-KM3-625-010		F-CABLE, 4P (SWITCH)	33	88-ZG4-541-010		SPR-E, EJECT 10
9	88-ZG3-226-010		LEVER ASSY, SLD-1	34	88-ZG3-278-010		PLATE, EJECT
10	88-ZG3-313-010		CAM, SLD	35	88-ZG4-001-110		MAGAZINE, T 10
11	88-ZG3-002-210		MAGAZINE, B	36	88-ZG4-514-110		SPR-P, TRAY 10
12	88-ZG3-246-010		PLATE ASSY, CKG-R	37	88-ZG3-003-210		TRAY,
13	88-ZG3-231-010		LEVER ASSY, CKG	38	8Z-KM1-214-010		HLDR, LED
14	88-ZG3-312-110		WORM-WHL, SLD	A	87-262-545-310		V+2-2.5
15	88-ZG3-221-010		HLDR ASSY, MOT ELV	B	87-261-031-410		V+2-2
16	88-ZG3-311-010		GEAR, WORM SLD	C	87-B10-258-010		W-P, 2.15-3.5-0.5
17	87-A91-054-010		MOT, FF-050SK	D	86-544-437-010		PW, 1.5-3.5-0.5
18	88-ZG3-211-110		CHAS ASSY, ELV	E	87-B10-272-010		W-P, 2.15-3.5-0.5 SLIT
19	88-ZG3-314-010		GUIDE, F	F	87-571-032-410		VIT+2-3
20	88-ZG3-315-210		GUIDE, R	G	87-067-869-010		V+1.7-8 HL BLK
21	88-ZG3-236-010		ARM ASSY,	H	87-067-310-010		PW, 2.1-4-0.15 C
22	88-ZG3-266-110		CLAMP ASSY,	I	87-262-545-310		V+2-2.5
23	88-ZG3-276-310		SPR-P, CLAMP				
24	88-ZG3-275-010		LEVER, SLD-2				
25	88-ZG3-302-010		WORM-WHL, ELV				

CD MECHANISM EXPLODED VIEW 2 / 2 (8ZG-8 RNF)



# CD MECHANISM PARTS LIST 2/2 (8ZG-8 RNF)

REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION	REF.NO.	PARTNO.	KANRI NO.	DESCRIPTION
1	88-ZG8-401-210		CHAS ASSY,MECHA	16	88-ZG8-427-010		HLDR,MOT MECHA
2	88-ZG8-425-010		GUIDE,PICKUP	17	88-ZG8-422-010		GEAR,MECHA 1
3	88-ZG3-317-010		CLR,ELV	18	88-ZG8-423-010		GEAR,MECHA 2
4	88-ZG8-426-010		HLDR,LEAD	19	87-A90-926-010		MOT,RF-3LOPA
5	88-ZG8-428-110		LEVER,PUSH SW	20	88-ZG8-421-010		TURN TABLE
6	88-ZG8-412-010		SPR-P,PICKUP	21	8Z-KM3-624-010		F-CABLE,2P (LIMIT)
7	87-A91-630-010		PICKUP,KSS-710A	A	87-571-032-410		VIT+2-3
8	8Z-KM4-631-010		PWB,FLEX PICK UP (AK)	B	87-352-529-310		VT2+1.7-4.0 BLK
9	88-ZG8-411-110		SPR-P,LEAD	C	88-ZG8-432-010		S-SCREW,V+1.7-5 IB LOCK
10	87-A91-054-010		MOT,FF-050SK	D	87-262-547-310		V+2-3 BLK
11	88-ZG8-431-010		SHAFT,LEAD	E	87-078-018-010		PW 1.55-3.6-0.25
12	88-ZG8-424-010		GEAR,MECHA 3	F	87-262-523-310		V+1.7-2 3 BLK
13	88-ZG3-332-010		CLR,LEVER ATK				
14	88-ZG3-256-110		LEVER ASSY,ATK-F				
15	88-ZG3-354-010		SPR-E,LEVER ATK				

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