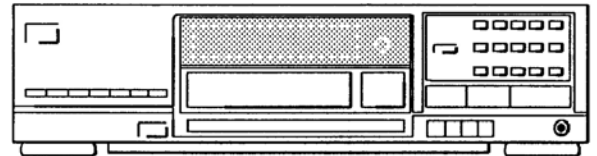


**AIWA®****XC-700****SERVICE  
MANUAL**

COMPACT DISC PLAYER

• BASIC CD MECHANISM : KSL - 210AFM

• TYPE. E.K

## SPECIFICATIONS

Type:	Compact disc digital audio system
Disc:	Compact disc
Scanning method:	Non contact optical scanner (semiconductor laser application)
Laser:	Semiconductor laser ( $\lambda=780$ nm)
Rotation speed:	Approx. 500 rpm-200 rpm (CLV)
Error correction:	Cross Interleave, Reed-Solomon Code
No. of channels:	2 channels
D-A conversion:	1 bit
Frequency response:	4 Hz-20 kHz $\pm 0.3$ dB
Harmonic distortion:	0.003% (1 kHz)
Dynamic range:	98 dB
Channel separation:	100 dB (1kHz)
S/N Ratio:	105 dB (A)
Wow/Flutter:	Unmeasurable
Outputs:	ANALOG OUT Phono jack Maximum output level: 2 V (10 k ohms) Load impedance: more than 10 k ohms DIGITAL OUT (OPTICAL) Optical output connector Output level: $-18 \pm 3$ dBm Light wave length: 660 nm PHONES Stereo phone jack Maximum output level: 4 mW or more Load impedance: 32 ohms

• Design and specifications are subject to change  
without notice.

AIWA Co., Ltd.

Tokyo Japan

Printed in Japan

# DISASSEMBLY INSTRUCTIONS

## 1. "Tray" Removal (See Figure - 1)

1) Remove the "Cabinet, Steel".

2) ♣For AUTOMATIC operation

Press the OPEN/CLOSE button to eject the "Tray".

♣For MANUAL operation

Insert a flat-head screwdriver into the hole at the bottom of the arrow to eject the "Tray".

(See Figure - 1)

3) Loosen 2 screws (A) and pull out the "Tray" toward you. (See Figure - 2)

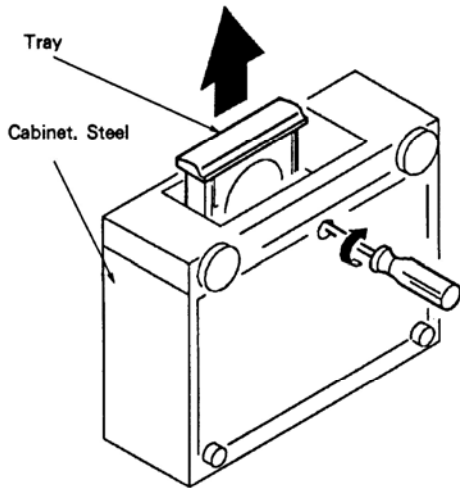


Fig - 1

## 2. "CD Mechanism" Removal (See Figure - 2)

1) Loosen 2 screws (A) and remove

the "Tray". remove 3 screws (B) and remove "CD Mechanism".

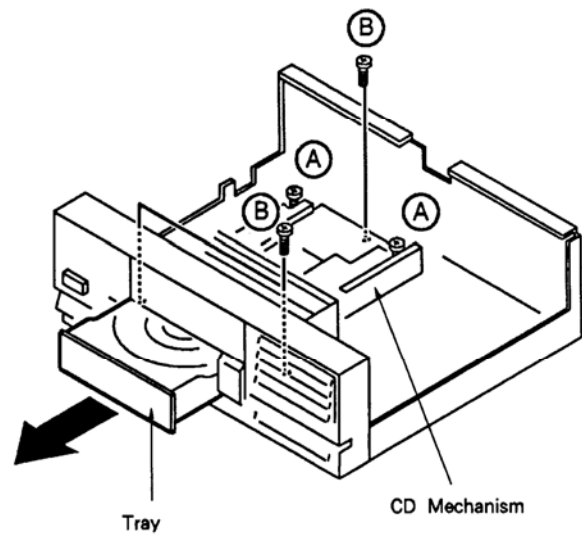


Fig - 2

## ■ ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q.TY
	1	★80-AC3-901-018	INSTRUCTION BOOKLET	※	1
	2	★80-AC3-951-019	REMOTE CONTROLLER RC-C104 YB	※	1
	3	★87-034-773-010	CORD, PIN R-237W-1M		1

# 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.

## ADVARSEL!



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

## VARO!

Avattaessa ja suojalukitus ohitettaessa olet alltiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

## WARNING!

Osynlig laserstråling när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

## CAUTION

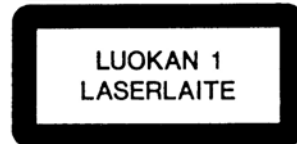
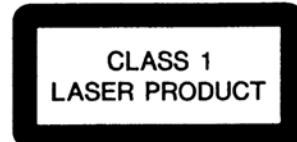
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

## ATTENTION

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

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

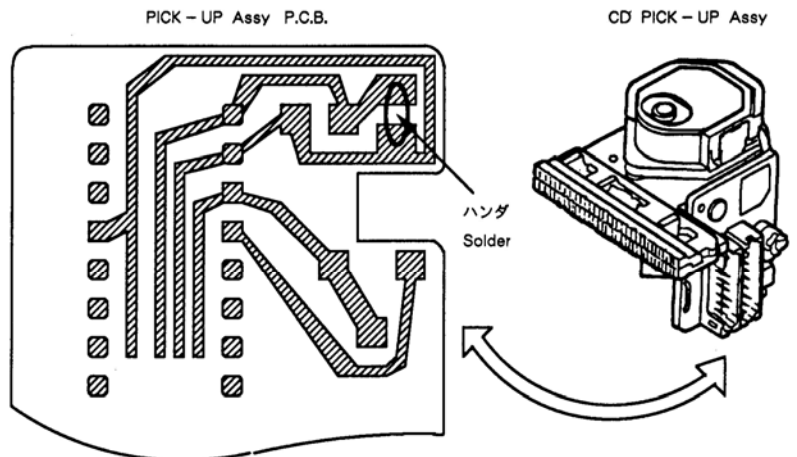
The CLASS 1 LASER PRODUCT label is located on the rear exterior.



## Precaution to replace Optical block (KSS - 210A)

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 figure below.



# ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
===IC===		
	87-002-248-010	IC, BA15218D
	87-001-440-010	IC, BA15218N
	87-001-184-010	IC, CXA1081S
	87-001-400-010	IC, CXA1082S
	87-001-944-010	IC, CXD1167Q
	80-AC3-608-010	IC, CXP50112-194Q
	87-002-211-010	IC, GP1F32T (DIGITAL OUT)
	87-001-486-010	IC, ICP-N15
	87-001-173-010	IC, LA6510
	87-027-940-010	IC, NJM2903S
	87-002-348-010	IC, NJM4580D
	87-020-903-010	IC, NJM7805FA
	87-002-349-019	IC, NJM78M06FA
	87-001-641-010	IC, NJM79M05FA
	87-002-350-019	IC, NJM79M06FA
	87-020-910-019	IC, PST523F
	87-002-347-010	IC, SAA7350
	87-001-790-010	IC, SBX1610-52 (REMOTE SENSOR)
	87-002-244-010	IC, SM5840DS
	87-001-169-010	IC, STA341M

## ===TRANSISTOR===

89-502-464-010	FET, 2SK246Y
89-213-292-010	TRANSISTOR, 2SB1329Q
89-213-321-019	TRANSISTOR, 2SB1332R
89-318-154-019	TRANSISTOR, 2SD1815Y
87-026-500-010	TRANSISTOR, 2SD2144S, UV
87-026-214-010	TRANSISTOR, DTA114YS
87-026-219-019	TRANSISTOR, DTA144ES
87-026-464-010	TRANSISTOR, DTC114TS
87-026-218-010	TRANSISTOR, DTC144ES

## ===DIODE===

87-027-376-019	DIODE, 1B4B41
87-001-574-010	DIODE, 1SR139-200
87-020-465-010	DIODE, 1SS133
87-001-187-010	DIODE, S5277B LC6
87-027-451-010	DIODE, ZENER HZ27-2L
87-027-475-010	DIODE, ZENER HZ6B1L
87-027-393-010	DIODE, ZENER HZ4C2

## ===MAIN CIRCUIT BOARD SECTION===

C101	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C102	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C103	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C104	★87-018-119-019	CAP, CERA-SOL U 100P-50 B
C105	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C106	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C107	★87-010-404-019	CAP, ELECT 4.7-50V SME
C108	★87-010-404-019	CAP, ELECT 4.7-50V SME
C109	★87-010-401-019	CAP, ELECT 1-50V SME
C111	★87-010-400-019	CAP, ELECT 0.47-50V SME
C112	★87-018-133-019	CAP, CERA-SOL U 4700P-16 X
C113	★87-010-374-019	CAP, ELECT 47-10V
C114	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C115	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C116	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C117	★87-010-370-019	CAP, ELECT 330-6.3V SME
C118	★87-010-408-019	CAP, ELECT 47-50V SME
C119	★87-010-370-019	CAP, ELECT 330-6.3V SME
C132	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C134	★87-010-404-019	CAP, ELECT 4.7-50V SME
C135	★87-018-131-019	CAP, CERA-SOL U 1000P-50 B
C142	★87-018-209-019	CAP, CERA-SOL U 0.1-50F
C143	★87-018-111-019	CAP, CERA-SOL U 27P-50 SL
C151	★87-018-132-019	CAP, CERA-SOL U 2200P-16 X

REF. NO.	PART NO.	DESCRIPTION
C152	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C153	★87-018-127-019	CAP, CERA-SOL U 470P-50 B
C156	★87-010-403-019	CAP, ELECT 3.3-50V SME
C157	★87-010-545-019	CAP, ELECT 0.22-50V SME
C159	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C160	★87-010-404-019	CAP, ELECT 4.7-50V SME
C161	★87-010-374-019	CAP, ELECT 47-10V
C162	★87-010-374-019	CAP, ELECT 47-10V
C164	★87-010-374-019	CAP, ELECT 47-10V
C165	★87-010-131-019	CAP, ELECT 0.47-50V BP
C167	★87-018-202-019	CAP, CERA-SOL U 6800P-16 X
C168	★87-018-202-019	CAP, CERA-SOL U 6800P-16 X
C171	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C172	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C173	★87-010-263-019	CAP, ELECT 100-10V
C174	★87-018-131-019	CAP, CERA-SOL U 1000P-50 B
C175	★87-010-405-019	CAP, ELECT 10-50V SME
C176	★87-018-103-019	CAP, CERA-SOL U 8.2P-50 SL
C177	★87-018-132-019	CAP, CERA-SOL U 2200P-16 X
C178	★87-010-265-019	CAP, ELECT 33-16V SME
C179	★87-010-384-019	CAP, ELECT 100-25V SME
C180	★87-010-265-019	CAP, ELECT 33-16V SME
C181	★87-010-374-019	CAP, ELECT 47-10V
C182	★87-010-374-019	CAP, ELECT 47-10V
C183	★87-010-374-019	CAP, ELECT 47-10V
C191	★87-010-400-019	CAP, ELECT 0.47-50V SME
C192	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C193	★87-018-209-019	CAP, CERA-SOL U 0.1-50 F
C301	★87-018-150-019	CAP, CERA-SOL U 18P-50 CH
C302	★87-018-150-019	CAP, CERA-SOL U 18P-50 CH
C311	★87-018-114-019	CAP, CERA-SOL U 39P-50 SL
C312	★87-018-114-019	CAP, CERA-SOL U 39P-50 SL
C313	★87-018-114-019	CAP, CERA-SOL U 39P-50 SL
C314	★87-018-114-019	CAP, CERA-SOL U 39P-50 SL
C315	★87-018-114-019	CAP, CERA-SOL U 39P-50 SL
C316	★87-018-114-019	CAP, CERA-SOL U 39P-50 SL
C317	★87-018-114-019	CAP, CERA-SOL U 39P-50 SL
C318	★87-018-114-019	CAP, CERA-SOL U 39P-50 SL
C321	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C322	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C323	★87-014-069-019	CAP, PP 3300P-100 J
C324	★87-014-069-019	CAP, PP 3300P-100 J
C325	★87-014-047-019	CAP, PP 390P-100 J
C326	★87-014-047-019	CAP, PP 390P-100 J
C329	★87-010-914-010	CAP, ELECT 47-10V BP ASF
C330	★87-010-914-010	CAP, ELECT 47-10V BP ASF
C333	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C334	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C337	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C338	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C341	★87-018-127-019	CAP, CERA-SOL U 470P-50 B
C342	★87-018-127-019	CAP, CERA-SOL U 470P-50 B
C343	★87-018-127-019	CAP, CERA-SOL U 470P-50 B
C344	★87-018-127-019	CAP, CERA-SOL U 470P-50 B
C351	★87-010-910-010	CAP, ELECT 47-10V ASF
C352	★87-010-910-010	CAP, ELECT 47-10V ASF
C353	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C354	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C355	★87-010-910-010	CAP, ELECT 47-10V ASF
C356	★87-010-910-010	CAP, ELECT 47-10V ASF
C357	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C358	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C359	★87-010-910-010	CAP, ELECT 47-10V ASF
C360	★87-010-910-010	CAP, ELECT 47-10V ASF
C361	★87-010-910-010	CAP, ELECT 47-10V ASF
C362	★87-010-910-010	CAP, ELECT 47-10V ASF
C363	★87-010-910-010	CAP, ELECT 47-10V ASF
C364	★87-010-910-010	CAP, ELECT 47-10V ASF

REF. NO.	PART NO.	DESCRIPTION
C365	★87-010-910-010	CAP, ELECT 47-10V ASF
C366	★87-010-910-010	CAP, ELECT 47-10V ASF
C371	★87-010-374-019	CAP, ELECT 47-10V
C372	★87-010-374-019	CAP, ELECT 47-10V
C381	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C382	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C383	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C384	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C385	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C386	★87-018-131-019	CAP, CERA-SOL U 1000P-50 B
C387	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C388	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C391	★87-010-403-019	CAP, ELECT 3.3-50V SME
C392	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C393	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C401	★87-010-124-019	CAP, ELECT 4700-16V
C402	★87-015-997-019	CAP, ELECT 2200-16V SME
C403	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C404	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C405	★87-010-263-019	CAP, ELECT 100-10V
C406	★87-010-263-019	CAP, ELECT 100-10V
C407	★87-010-410-019	CAP, ELECT 330-50V SME
C408	★87-018-209-019	CAP, CERA-SOL U 0.1-50 F
C409	★87-018-209-019	CAP, CERA-SOL U 0.1-50 F
C410	★87-010-235-019	CAP, ELECT 470-16V SME
C411	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C481	★87-010-237-019	CAP, ELECT 1000-16V
C482	★87-010-237-019	CAP, ELECT 1000-16V
C483	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C484	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C501	★87-018-209-019	CAP, CERA-SOL U 0.1-50 F
C506	★87-010-374-019	CAP, ELECT 47-10V
C508	★87-010-374-019	CAP, ELECT 47-10V
C604	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C611	★87-010-374-019	CAP, ELECT 47-10V
C612	★87-010-374-019	CAP, ELECT 47-10V
EM102	★87-008-372-010	FILTER, EMI BL OIRNI
EM103	★87-008-372-010	FILTER, EMI BL OIRNI
EM104	★87-008-372-010	FILTER, EMI BL OIRNI
EM301	★87-008-372-010	FILTER, EMI BL OIRNI
EM303	★87-008-372-010	FILTER, EMI BL OIRNI
EM304	★87-008-372-010	FILTER, EMI BL OIRNI
J101	★87-009-052-019	JACK PIN 2P(ANALOG OUT)
J102	87-002-211-010	IC, GP1F32T(DIGITAL OUT)
L101	★87-003-136-019	COIL, 100UH
R116	★87-025-429-010	RES, M/F 47K-1/6WF
R117	★87-025-429-010	RES, M/F 47K-1/6WF
SFR101	★87-024-169-010	SFR 2.2K
SFR151	★87-024-173-010	SFR 22K
SFR152	★87-024-173-010	SFR 22K
SFR153	★87-024-173-010	SFR 22K
SFR154	★87-024-173-010	SFR 22K
X301	★84-733-617-019	VIB, X'TAL 16.9344MHZ

===FRONT-1 CIRCUIT BOARD SECTION===

FL201	89-AC1-609-010	FL, 12BT45GK(DISPLAY)
SW201	87-036-142-010	TACT SW(1)
SW202	87-036-142-010	TACT SW(2)
SW203	87-036-142-010	TACT SW(3)
SW204	87-036-142-010	TACT SW(4)
SW205	87-036-142-010	TACT SW(5)
SW206	87-036-142-010	TACT SW(6)
SW207	87-036-142-010	TACT SW(7)
SW208	87-036-142-010	TACT SW(8)
SW209	87-036-142-010	TACT SW(9)
SW210	87-036-142-010	TACT SW(10)
SW211	87-036-142-010	TACT SW(10)

REF. NO.	PART NO.	DESCRIPTION
SW212	87-036-142-010	TACT SW(PRGM)
SW213	87-036-142-010	TACT SW(CHECK)
SW214	87-036-142-010	TACT SW(DELETE)
SW215	87-036-142-010	TACT SW(AC)
SW216	87-036-142-010	TACT SW(STOP ■)
SW217	87-036-142-010	TACT SW(PAUSE ■■)
SW218	87-036-142-010	TACT SW(PLAY ►)
SW219	87-036-142-010	TACT SW(SKIP ◀◀)
SW220	87-036-142-010	TACT SW(SKIP ▶▶)
SW221	87-036-142-010	TACT SW(SEARCH ◀◀)
SW222	87-036-142-010	TACT SW(SEARCH ▶▶)
SW223	87-036-142-010	TACT SW(OPEN/CLOSE ▲)

SW231 87-036-142-010 TACT SW(CAL)

===FRONT-2 CIRCUIT BOARD SECTION===

SW224	87-036-142-010	TACT SW(TIME)
SW225	87-036-142-010	TACT SW(BLANK)
SW226	87-036-142-010	TACT SW(RANDOM)
SW227	87-036-142-010	TACT SW(INDEX ◀ )
SW228	87-036-142-010	TACT SW(INDEX ▶ )
SW229	87-036-142-010	TACT SW(REPEAT 1/ALL)
SW230	87-036-142-010	TACT SW(QUICK PEAK SEARCH)

===AC SW CIRCUIT BOARD SECTION===

△C421	★87-019-113-010	CAP, FILM SG 2200P-400(FMG)
△SW401	★87-036-015-019	PUSH SW(POWER)

===HP CIRCUIT BOARD SECTION===

C391	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C392	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C393	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
EM391	★87-008-372-010	FILTER, EMI BL OIRNI
EM392	★87-008-372-010	FILTER, EMI BL OIRNI
EM393	★87-008-372-010	FILTER, EMI BL OIRNI
J391	★87-009-203-019	JACK, 6.3 ST BLK, GLD(PHONES)

===MOTOR-1 CIRCUIT BOARD SECTION===

※PCB-F	★91-625-848-110	MOTOR-1 C. B(RF-310T-11400)
※PCB-F	★91-628-263-110	MOTOR-1 C. B(MDN-4RA3NTAS/4RA3ETA)
※M1	9X-264-077-010	MOTOR GEAR ASSY(RF-310T-11400)
※M1	9X-264-134-410	MOTOR GEAR ASSY(MDN-4RA3ETA)
※M2	9X-264-133-710	MOTOR ASSY(W/CHASSIS, T. T) (SPINDLE) (RF-310-11400)
※M2	9X-264-135-810	MOTOR ASSY(W/CHASSIS, T. T) (SPINDLE) (MDN-4RA3NTAS)

SW1	91-572-053-110	LEAF SW(INSIDE LIMIT)
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===MOTOR-2 CIRCUIT BOARD SECTION===

M3	9X-246-133-610	MOTOR ASSY(LOADING)
----	----------------	---------------------

===MISCELLANEOUS===

98-848-127-310	OPTICAL PICK UP KSS-210A(S) (RP)	
△	★87-034-781-018	AC CORD (E) (E)
△	★87-034-592-018	AC CORD (K) (K)
△	★87-085-185-010	BUSHING, AC CORD E

△PT401	80-AC3-603-018	POWER TRANSFORMER EZ(E)
△PT401	80-AC3-604-019	POWER TRANSFORMER K(K)
SW2	91-572-052-110	LEAF SW(OPEN/CLOSE)

※Caution

Two Types of the spindle (DISC) motor and sled motor are used, but they are not compatible.  
Check the part numbers (MDN ...., RF ....) on the labels of motors and replace motors with the same one.

# IC DESCRIPTION

## IC,CXA1081S

Pin No.	Pin Name	I/O	Description
1	RFI	I	The RF summing amplifier output is C-connected and input.
2	RF0	O	RF summing amplifier output. Eye pattern test point.
3	RF $\ominus$	I	Inverting input of the RF summing amplifier. A feedback resistor is connected between pins 2 and 3.
4	P/N	I	Switches the input according to the polarity of the laser diode. (Reserved)
5	LD	O	Output to control the laser diode output.
6	PD	I	Connects the photo-detector which detects the laser diode output.
7	PD1	I	RFI-V amplifier (1) inverting input. Connected to PIN diode A + C for the current input.
8	PD2	I	RFI-I amplifier (2) inverting input. Connected to PIN diode B + D for the current input.
9	VC	I	Reference voltage input within the IC. Connected to pin 14 with signal power supply. Connected to the ground with the positive and negative power supply.
10	F	I	FI-V amplifier inverting input. Connected to PIN diode F for the current input.
11	E	I	EI-V amplifier inverting input. Connected to PIN diode E for the current input.
12	EO	O	EI-V amplifier output. A feedback resistor is connected.
13	EI	I	Adjusts the EI-V amplifier gain.
14	VR	O	Outputs the neutral voltage. Connected to pin 9 with the signal power supply. OPEN with positive and negative power supply.
15	CC2	O	Defect bottom hold (1) output. A capacitor is connected between pins 15 and 16.
16	CC1	I	The defect bottom (1) output is C-connected and input.
17	VEE	—	Grounded with the signal power supply. Becomes a negative power supply with the positive and negative power supply.
18	FE BIAS	I	Inputs a bias voltage for the positive-phase input of the focus error amplifier.
19	FE	O	Focus error amplifier output.
20	TE	O	Tracking error amplifier output.
21	DEFECT	O	Defect detection output. Outputs the H <sup>+</sup> signal that detects a defect on the mirror surface.
22	MIRR	O	Mirror comparator output.
23	CP	O	A mirror hold capacitor is connected to this pin.
24	CB	O	The defect bottom hold (2) capacitor is connected to this pin.
25	DGND	—	Ground in the digital circuit.
26	ASY	I	Auto-symmetry control input.
27	EFM	O	EFM output comparator output.
28	FOK	O	Focus OK output.
29	LD ON	I	Laser diode ON/OFF control input.
30	VCC	—	Positive power supply.

IC,CXA1082S

Pin No.	Pin Name	I/O	Description
1	DVEE	—	-5 V terminal.
2	DFCT	I	Interface input terminal for microcomputer.
3	TE	I	Tracking error signal input terminal.
4	TZC	I	Tracking zero-cross comparator input terminal.
5	ATSC	I	ATSC detection window comparator input terminal.
6	FE	I	Focus error signal input terminal.
7	VC	—	Connected to GND.
8	FGD	O	Capacitor is inserted between this pin and pin 3 to decrease the focus servo's high-frequency gain.
9	FS3	I	Focus servo's high-frequency gain is selected by FS3 on/off operation. (Not connected.)
10	FLB	O	Time-constant external terminal for raising the focus servo's low-frequency range.
11	FEO	O	Power transistor drive's operational amplifier output terminal.
12	FE $\ominus$	I	Focus amplifier inversion input terminal.
13	SRCH	O	Time-constant external terminal for forming a focus search wave.
14	TGU	O	Time-constant external terminal for tracking high-frequency gain selection.
15	TG2	O	Time-constant external terminal for tracking high-frequency gain selection.
16	AVCC	—	+5 V terminal.
17	TAO	O	Tracking error signal output terminal.
18	TA $\ominus$	I	Tracking amplifier's inversion input terminal.
19	TA $\oplus$	I	Threading amplifier's noninversion input terminal.
20	SLO	O	Threading amplifier output terminal.
21	SL $\ominus$	I	Threading amplifier's inversion input terminal.
22	SSTOP	I	On/off detection signal terminal of disc's innermost detection limit switch.
23	FSET	I	Terminal for setting the focus tracking's phase compensation peak and CLV LPF (f <sub>0</sub> ).
24	SENS	O	Outputs IC's internal state corresponding to data address. (It is changed according to address of internal serial register.)
25	AVEE	—	-5 V terminal.
26	C. OUT	O	Outputs signal for counting number of tracks in high-speed mode.
27	DIRCT	I	Used in one-track jump. Normally "H". "L" when track jump pulse is inverted. Consequently "H" when normal tracking mode is set. "L" in a period when the rising and falling edges of TZC are detected. (Not connected.)
28	$\overline{\text{XRST}}$	I	"L" when all the internal register are cleared.
29	DATA	I	Serial data transmission from CPU. Input started from LSB.
30	XLT	I	"L" when data of internal serial shift register is transmitted to the latch address-decoded.
31	CLK	I	DATA transmission clock. Data is taken in at the falling edge.
32	D GND	—	GND terminal.
33	BW	I	Loop filter's time-constant external terminal.
34	PDI	I	CXD1167Q phase comparator output PDO input terminal.

Pin No.	Pin Name	I/O	Description
35	ISET	I	Passes a current to determine the focus search, tracking jump, and threading kick height.
36 37	VCOF 3.5V	I	VCO's free-running frequency is proportional to the resistance value between this pin and pin 37.
38	C864	O	8.64 MHz VCO output terminal.
39	LOCK	I	Connected to the LOCK terminal of CXD1167Q.
40	MDP	I	CXD1167Q MDP connection terminal.
41	MON	I	CXD1167Q MON connection terminal.
42	FSW	I	LPF time-constant external terminal of CLV servo's error signal.
43	DVCC	—	+5 V terminal.
44	SPDL $\ominus$	I	Spindle drive amplifier's inversion input terminal.
45	SPDLO	O	Spindle motor drive terminal.
46	WDCK	I	Word clock signal input terminal.
47	FOK	I	Focus OK signal input terminal.
48	MIRR	I	Mirror signal input terminal.

#### IC,CXD1167Q

Pin No.	Pin Name	I/O	Description
1	FSW	O	Output to switch the time constant of the spindle motor output filter.
2	MON	O	Spindle motor on/off control output.
3	MDP	O	Spindle motor drive output. Coarse control in the CLV.S mode and phase control in the CLV.P mode.
4	MDS	O	Spindle motor drive output. Speed control in the CLV.S mode.
5	EFM	I	Inputs an EFM signal from the RF amplifier.
6	ASY	O	Output to control the slice level of the EFM signal.
7	LOCK	O	The GFS signal is sampled by the WFCK/16. When the GFS signal is "H", this pin outputs "H", and when the signal is "L" 8 times continuously, it outputs "L".
8	VCOO	O	VCO output. When this is locked to the EFM signal. $f = 8.6436$ MHz
9	VCOI	I	VCO input.
10	TEST	—	Connected to GND. (0 V)
11	PDO	O	Phase comparison output between the EFM signal and VCO/2.
12	VSS	—	Connected to GND. (0 V)
13	CLK	I	Inputs a clock signal for the serial data transfer from CPU. Latches data at the rise of the clock signal.
14	XLT	I	Latch input from CPU. Latches 8-bit shift register data (serial data from CPU) to each register.
15	DATA	I	Inputs serial data from CPU.
16	$\overline{XRST}$	I	System reset input. The system is reset at "L" input.
17	CNIN	I	Tracking pulse input.
18	SENSE	O	Outputs the internal state according to the address.
19	MUTG	I	Muting input. When the ATTM in the internal register is "L", the system is in the normal state if the MUTG is "L" and the sound is muted if the MUTG is "H".



Pin No.	Pin Name	I/O	Description
20	CRCF	O	Outputs the CRC checking result of sub-code Q. (Reserved)
21	EXCK	I	Clock input for the sub-code serial output. (Connected to GND.)
22	SBSO	O	Sub-code serial output. (Reserved)
23	SUBQ	O	Sub-code Q output.
24	SCOR	O	Sub-code sync S0 + S1 output.
25	SQCK	I/O	Clock signal for reading of sub-code Q.
26	SQEX	I	SQCK select input. (Connected to +5 V.)
27	DOTX	O	Digital audio interface output.
28	GFS	O	Display output of the frame sync locking state. Goes "H" when locked.
29 }	TEST (DB08) }	—	Connected to +5 V. (Do not open.) Data terminal of external RAM.
32	TEST (DB05)		
33	VDD	—	Power supply (+5 V)
34 }	TEST (DB04) }	—	Connected to +5 V. (Do not open.) Data terminal of the external RAM.
37	TEST (DB01)		
38 }	TEST (RA01) }	—	Connected to +5 V. (Do not open.) And external RAM address output.
40	TEST (RA03)		
41 }	TEST (RA04) }	—	Connected to GND. (Do not open.) Address output of the external RAM.
48	TEST (RA11)		
49	TEST ( $\overline{\text{RAW}}\text{E}$ )	—	Connected to GND.
50	TEST ( $\overline{\text{RAC}}\text{S}$ )	—	Connected to GND.
51	C4M	O	1/2 division output of the crystal oscillator. $f = 4.2336$ MHz (Reserved)
52	VSS	—	Connected to GND. (0 V)
53	XTAI	I	Crystal oscillator input. $f = 8.4672$ MHz
54	XTAO	O	Crystal oscillator output. $f = 8.4672$ MHz (Reserved)
55	MD1	I	Mode select input 1 used at "H" Mode select input 2 used at "L" Mode select input 3 used at "L" Mode } { Used in the mode with the clock frequency 8.4672 MHz, the digital output OFF. the digital filter ON. }
56	MD2	I	
57	MD3	I	
58	SLOB	I	Input to switch the code of the audio data output. "L" causes the 2 second complement output and "H" causes the offset binary output. (Connected to GND.)
59	PSSL	I	Input to switch the mode of the audio data output. "L" causes serial output and "H" causes parallel output. (Connected to GND.)
60	APTR	O	Aperture correction control output. 44.1 kHz with the filter OFF. (Reserved)
61	APTL	O	Aperture correction control output. 44.1 kHz with the filter OFF. (Reserved)
62	DA01 (C1F1)	O	DA01(LSB of parallel audio data) output with PSSL = "H". C1F1 output with PSSL = "L". (Reserved)

Pin No.	Pin Name	I/O	Description
63	DA02 (C1F2)	O	DA02 output with PSSL = "H". C1F2 output with PSSL = "L". (Reserved)
64	DA03 (C2F1)	O	DA03 output with PSSL = "H". C2F1 output with PSSL = "L". (Reserved)
65	DA04 (C2F2)	O	DA04 output with PSSL = "H". C2F2 output with PSSL = "L". (Reserved)
66	DA05 (C2FL)	O	DA05 output with PSSL = "H". C2FL output with PSSL = "L". (Reserved)
67	DA06 (C2PO)	O	DA06 output with PSSL = "H". C2PO output with PSSL = "L". (Reserved)
68	DA07 (RFCK)	O	DA07 output with PSSL = "H". RFCK output with PSSL = "L". (Reserved)
69	DA08 (WFCK)	O	DA08 output with PSSL = "H". WFCK output with PSSL = "L". (Reserved)
70	DA09 ( $\overline{\text{PLCK}}$ )	O	DA09 output with PSSL = "H". PLCK output with PSSL = "L". (Note 1) (Reserved)
71	DA10 (VGFS)	O	DA10 output with PSSL = "H". VGFS output with PSSL = "L". (Reserved)
72	DA11 (GTOP)	O	DA11 output with PSSL = "H". GTOP output with PSSL = "L". (Reserved)
73	VDD	—	Power supply (+5 V)
74	DA12 ( $\overline{\text{RAOV}}$ )	O	DA12 output with PSSL = "H". RAOV output with PSSL = "L". (Reserved)
75	DA13 (C4LR)	O	DA13 output with PSSL = "H". C4LR output with PSSL = "L". (Reserved)
76	DA14 ( $\overline{\text{C210}}$ )	O	DA14 output with PSSL = "H". C210 output with PSSL = "L".
77	DA15 (C210)	O	DA15 output with PSSL = "H". C210 output with PSSL = "L". (Note 2) (Reserved)
78	DA16 (DATA)	O	DA16(MSB of parallel audio data) output with PSSL = "H". DATA output with PSSL = "L". (Note 3)
79	WDCK	O	Strobe signal output. 88.2 kHz with the filter OFF.
80	LRCK	O	Strobe signal output. 44.1 kHz with the filter OFF.

Note 1)  $\overline{\text{PLCK}}$ : VCO/2 output. When locked to the EFM signal,  $f = 4.3218 \text{ MHz}$

Note 2) C210: Bit clock signal.  $f = 2.1168 \text{ MHz}$

Note 3) DATA: Audio signal serial data output

## IC,CXP50112 – 194Q

Pin No.	Pin Name	I/O	Description
1	EMP	O	Not connected.
2	VRCP	—	Not connected.
3	VRCN	—	Not connected.
4	VRIL	—	Not connected.
5~15	Seg a~k	O	FL segment signal terminal.
16	NC	—	Not connected.
17~28	G 1~12	O	FL grid signal terminal.
29	SCOR	I	Sub code sync S0 + SI input.
30	TX	O	Not connected.
31	TEX	I	Connected to VDD.
32	$\overline{\text{RST}}$	I	Reset input terminal. (L reset)
33	NC	—	Connected to VDD.
34	VDD	—	+5 V line terminal.
35~38	KEY 0~3	I	Key matrix input terminal.
39	DFLT	O	DF control, latch output terminal.
40	DFCK	O	DF control, clock output terminal.
41	DFD	O	DF control, data output terminal.
42	$\overline{\text{LDON}}$	O	Laser diode ON/OFF control terminal.

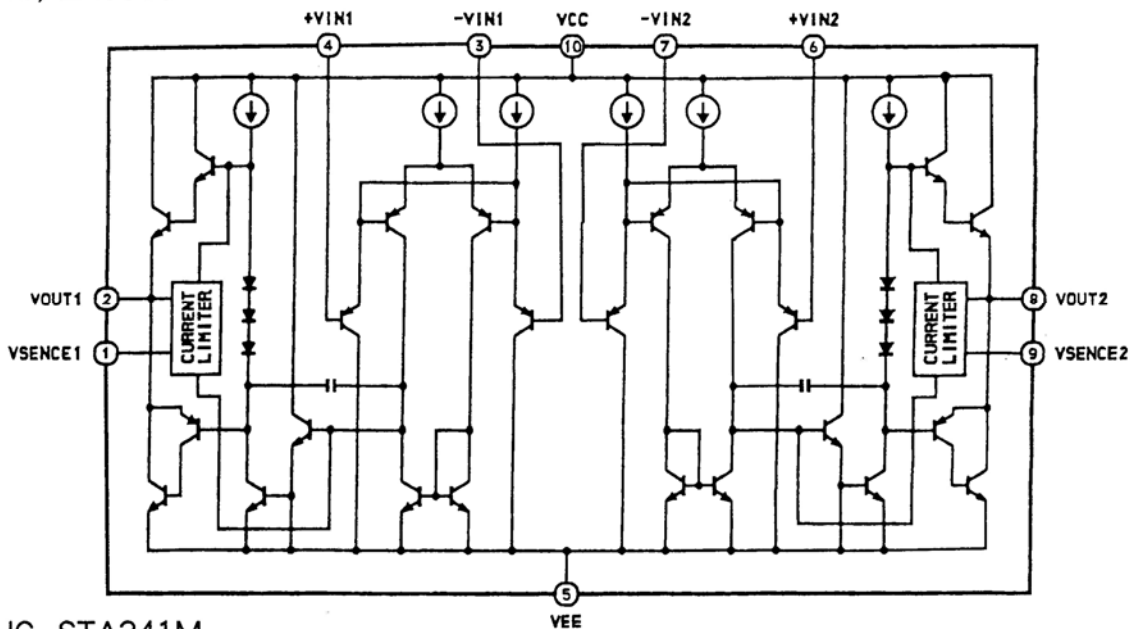
Pin No.	Pin Name	I/O	Description
43	WDCK	I	88.2 kHz input terminal.
44	SQCK	O	Subcode Q read clock output terminal.
45	NC	—	Not connected.
46	SUBQ	I	Subcode Q input terminal.
47	PCSW	I	Connected to GND.
48	FOK	I	FOK (CXA1081S) input terminal.
49	$\overline{\text{SWCLOSE}}$	I	Tray close SW input terminal. LOW ACTIVE
50	$\overline{\text{SWOPEN}}$	I	Tray open SW input terminal. LOW ACTIVE
51	OPEN	O	Tray open output terminal.
52	CLOSE	O	Tray close output terminal.
53	NC	O	Not connected.
54	$\overline{\text{AMUTE}}$	O	Audio mute signal output terminal.
55	MUTG	O	Digital mute signal output terminal.
56	$\overline{\text{XRST}}$	O	System reset signal output terminal.
57	DATA	O	Servo control DATA output terminal.
58	$\overline{\text{XLT}}$	O	Servo control latch output terminal.
59	CLK	O	Servo control clock output terminal.
60	CALP	O	Calibration PWM output terminal.
61	NC	—	Not connected.
62	RMC	I	Remote control signal input terminal.
63	SENS	I	Sense input terminal. (CXA1082S)
64	GFS	I	Frame sync lock signal input terminal. (CXD1167Q)
65	NC	I	Connected to VDD.
66	COMP	I	Peak search input terminal.
67	$\overline{\text{ADINT}}$	O	Peak search initialize output signal.
68	PK	O	Peak search ON output terminal.
69	EMP	O	Not connected.
70	NC	O	Not connected.
71	VSS	—	GND terminal.
72	XTAL	O	Not connected.
73	NC	I	Connected to VDD.
74	EXTAL	I	System clock input terminal. (CXD1167Q C4M)
75	VREF	I	Connected to VDD.
76	VFDP	I	Pulldown (built-in) resistor line terminal.
77	FBZ	O	Off-set cancel signal terminal while search focus.
78	CAL0	O	Calibration control signal terminal. (-6 dB)
79	CAL1	O	Calibration control signal terminal. (-12 dB)
80	CAL2	O	Calibration control signal terminal. (ON/OFF)

IC, SAA7350

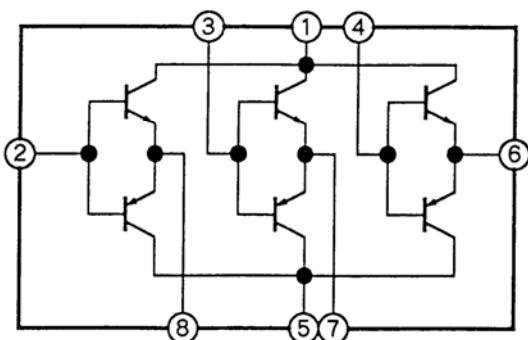
Pin No.	Pin Name	I/O	Description
1	XSEL	I	Crystal frequency select. This pin is used to select the master crystal frequency as follows: -XSEL HIGH=384 fs XSELLOW=256 fs This pin defaults to XSEL HIGH when not connected.
2	TEST6	—	Test6: This pin should be left open circuit.
3	IDF3	I	Input data format. These three pins determine the input format the device is to operate in (see functional description). If unconnected these pins will default HIGH (i.e. burst clock mode).
4	IDF2	I	
5	IDF1	I	
6	TEST4	—	Test4: This pin should be left open circuit.
7	SDIR	I	Serial Data Input. Used in simultaneous 1 mode only (for the right channel signal). When not used, this pin will be internally pulled high.
8	SDIL	I	Serial Data Input. This should be a 16, 18 or 20-bit linear 2's complement PCM signal. In simultaneous mode this pin is used for the left channel signal.
9	WSI	I	Serial input Word Select signal. Signifies whether data word is for the left or right channel. Can be either fs, 2 fs, 4 fs or 8 fs where fs is the system sampling frequency. Fs can lie between 16 kHz and 53 kHz.
10	SCKI	I	Bit clock input for the serial input interface.
11	TEST1	—	Test1: This pin should be left open circuit.
12	VDD	—	+5 V power supply for the digital section.
13	VSS	—	Ground connection for the digital section.
14	XIN	I	Crystal Oscillator Input.
15	XOUT	O	Crystal Oscillator Output.
16	XSYS1	O	Buffered Oscillator Output.
17	TEST5	—	Test5: In normal operation this pin should be tied LOW. (Not connected.)
18	VDDAR	—	Analog 5 V supply for right channel.
19	INTR $\oplus$	O	Output from the Right Positive switched-capacitor integrator. Input to differential op-amp.
20	FBR $\oplus$	O	Feedback connection for the Right positive switched-capacitor integrator.
21	VSSAR	—	0 V supply for right channel.
22	FBR $\ominus$	I	Feedback connection for the Right Negative switched-capacitor integrator.
23	INTR $\ominus$	O	Output from the Right Negative switched-capacitor integrator. Input to differential op-amp.
24	VRCR	I	High impedance voltage reference for right channel inputs. Typically VDDAR/2.
25	VDACR	—	Reference Voltage Supply for Right channel DAC's. Normally this will be connected to VSS.
26	VRDR	O	Right channel Voltage Reference Output. Typically VDDAR/2.
27	VDDATR	—	5 V supply for right channel analog timing.
28	VSSAT	—	0 V supply for left and right channel analog.
29	VDDATL	—	5 V supply for left channel analog timing.
30	IRR	I	24 kohm bias resistor connection for the reference current generator circuit.

Pin No.	Pin Name	I/O	Description
31	VROL	O	Left channel Voltage Reference Output. Typically $VDDAL/2$ .
32	VDA CL	—	Reference Voltage Supply for Left channel DAC. Normally this will be connected to VSS.
33	VRCL	I	High impedance voltage reference for left channel inputs and for bias current generator. Typically $VDDAL/2$ .
34	INTL $\ominus$	O	Output for the Left Negative switched-capacitor integrator. Input to differential op-amp.
35	FBL $\ominus$	I	Feedback connection for the Left Negative switched-capacitor integrator.
36	VSSAL	—	0 V supply for left channel.
37	FBL $\oplus$	O	Feedback connection for the Left Negative switched-capacitor integrator.
38	INTL $\oplus$	O	Output from the Left Positive switched-capacitor integrator. Input to differential op-amp.
39	VDDAL	—	Analog 5 V supply for left channel.
40	TEST2	—	Test2: This pin should be left open circuit.
41	TEST3	—	Test3: This pin should be left open circuit.
42	TEST7	—	Test7: This pin should be left open circuit.
43	XSYS2	O	Output clock at a frequency of half the master clock frequency. (Not connected.)
44	TEST8	—	Test8: This pin should be left open circuit.

IC BLOCK DIAGRAM  
IC, LA6510

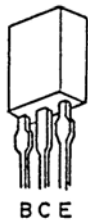


IC, STA341M



IC,SM5840DS

Pin No.	Pin Name	I/O	Description
1	$\overline{CKSL}$	I	Normal/High speed mode selection. (When the $\overline{CKSL}$ is "H", it enters the normal mode. When the $\overline{CKSL}$ is L, it enters the high speed mode.) (Not connected.)
2	XTI	I	Oscillating input terminal (It is fixed at 16.9344 MHz in the CD system. When the $\overline{CKSL}$ is "H", it is set to 384 fs (16.9344 MHz), fs = 44.1 kHz. When the $\overline{CKSL}$ is L, it is set to 192 fs (16.9344 MHz), fs = 88.2 kHz.)
3	XTO	O	Oscillating output terminal. (Not connected.)
4	CKO	O	Oscillating output clock. (A frequency is the same as that in the XTI terminal.) (Not connected.)
5	Vss	—	Connected to GND.
6, 7	N. C	—	Not connected.
8	DFD	I	Mode set data.
9	DFCK	I	Mode set clock.
10	DFLT	I	Mode set latch enable.
			Settings of digital attenuator and mode flag register are performed.
11	$\overline{XRST}$	I	System reset. (Initialization)
12	BCKO	O	Output bit clock.
13	DOR	O	Rch data output.
14	DOL	O	Lch data output.
			8 fs data outputs when the OMOD flag is set to "L". 4 fs data outputs when the OMOD flag is set to "H".
15	WCKO	O	Output word clock.
16	VDD	—	Power supply terminal. (5 V)
17~19	N. C	—	Not connected.
20	LRCK	I	Sample rate (fs) clock of input data. In the CD system, it is set to 44.1 kHz in the normal mode and 88.2 kHz in the high speed mode.
21	BCKK	I	Input bit clock.
22	DIN	I	Input data.



2SB1329  
2SB1332



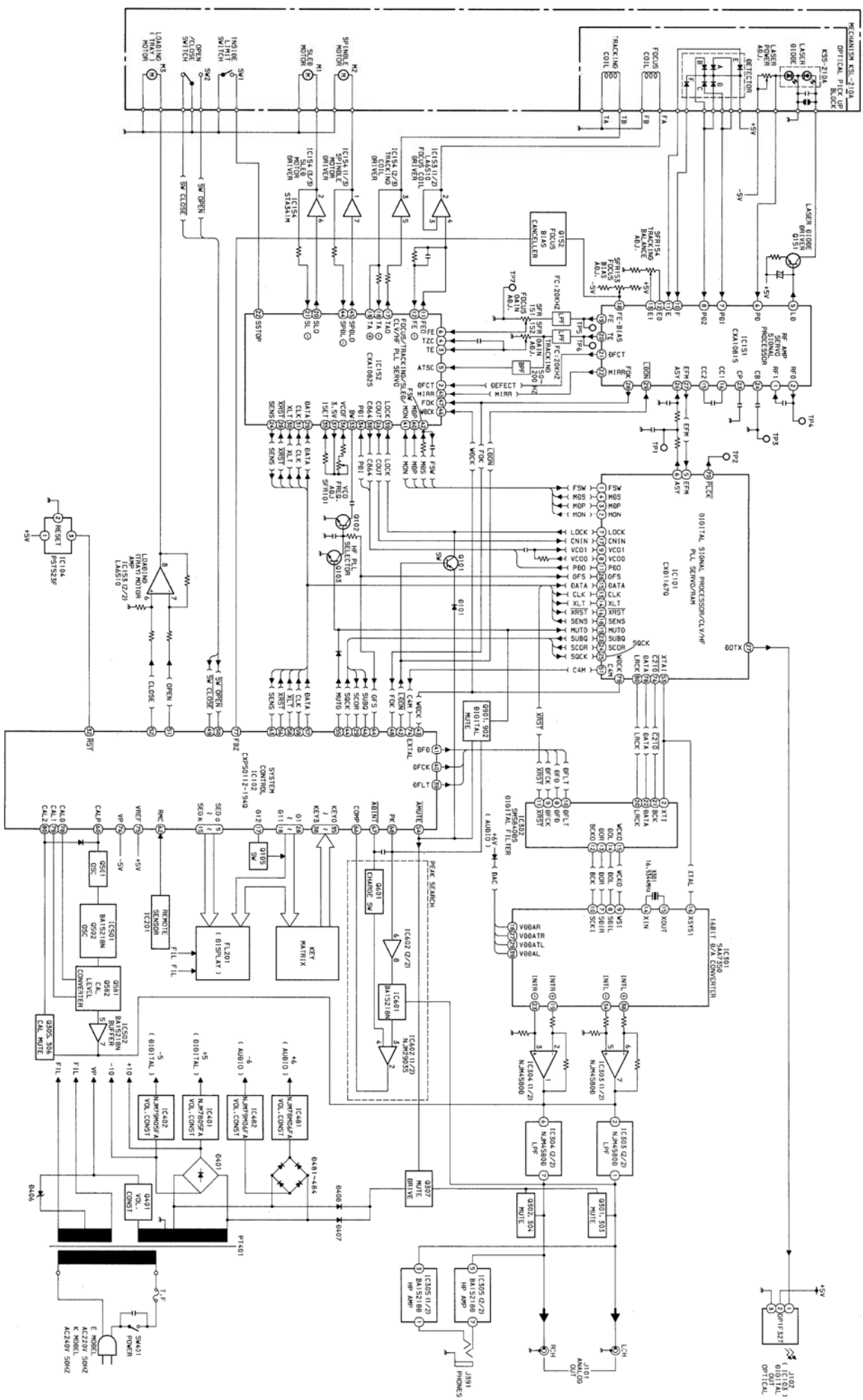
2SC1815



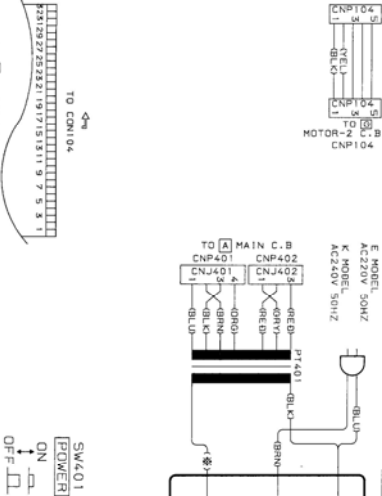
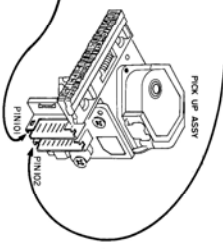
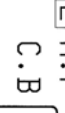
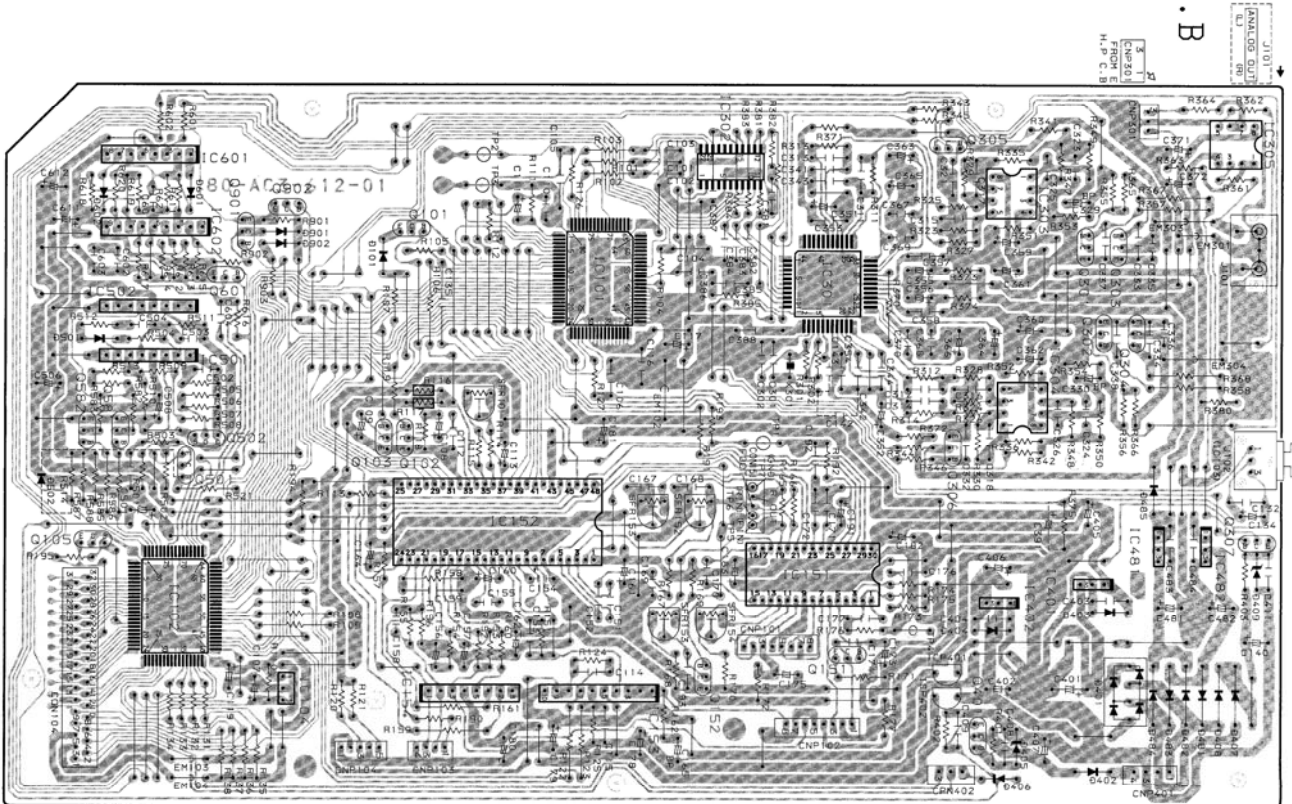
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DTA144  
DTC114  
DTC144



2SK246

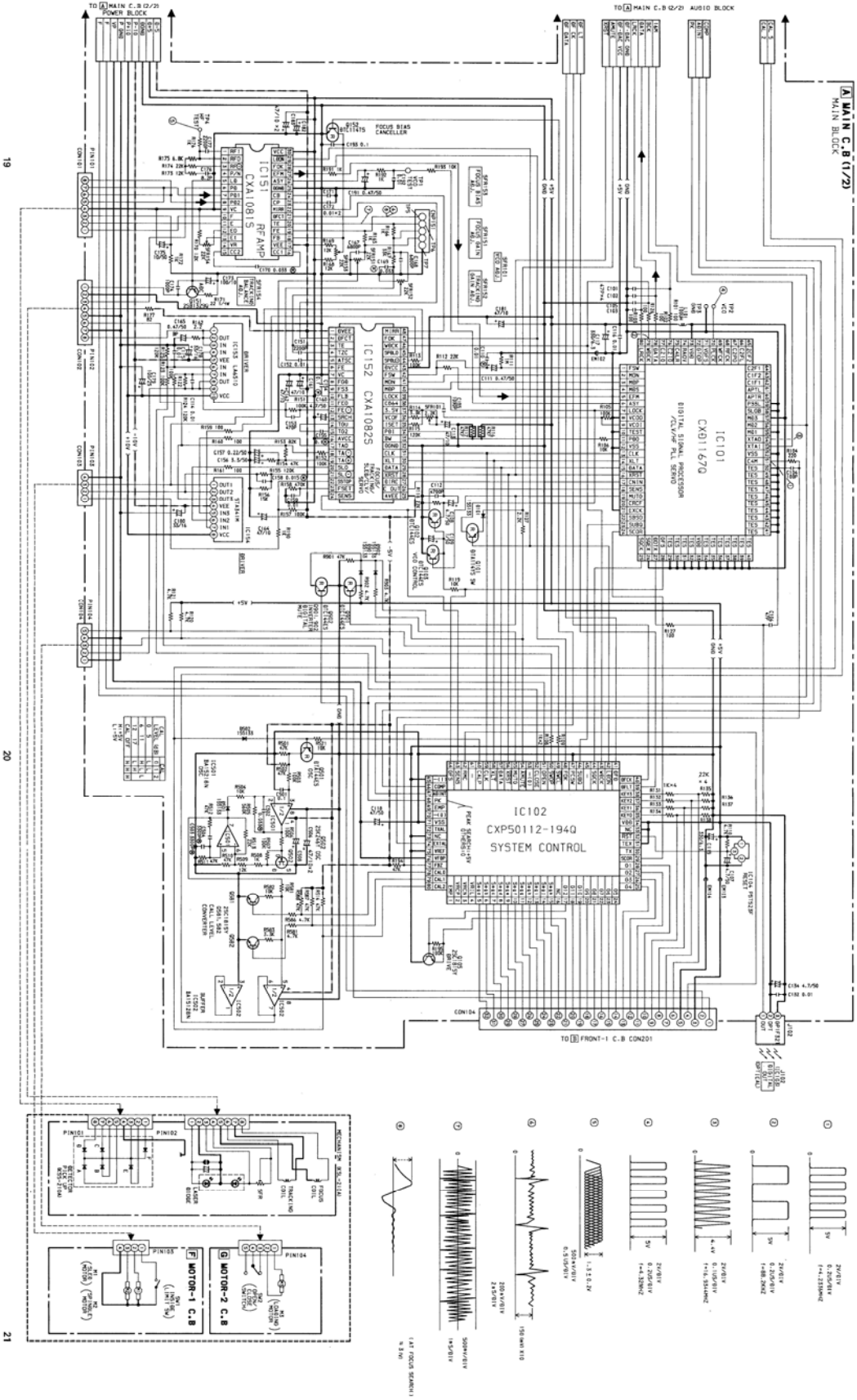


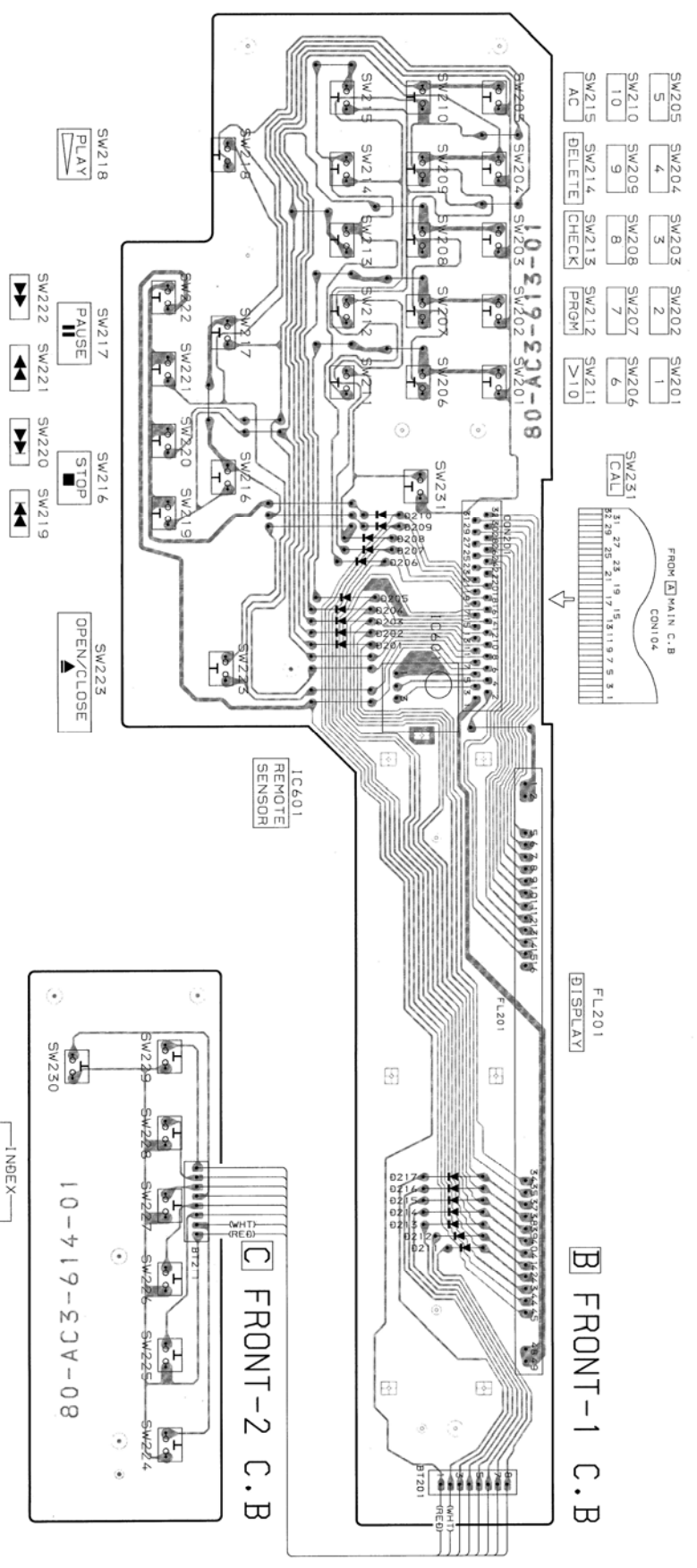
A MAIN C.B



GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.  
(プリント基板内のケミコンの極性表示は⊖表示です。)







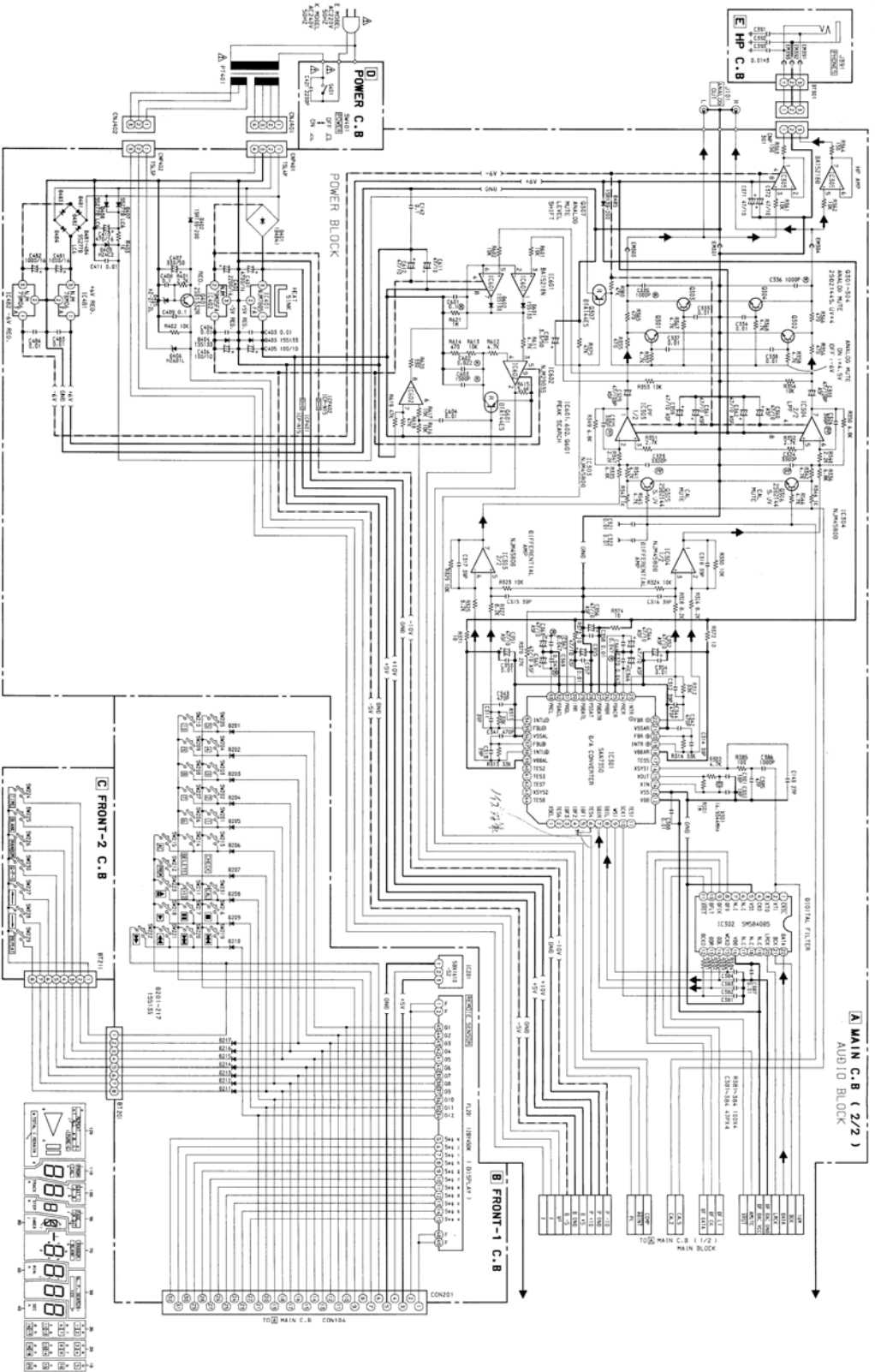
22

23



24

GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE (グラフィック基板の電容量は負表示です。)

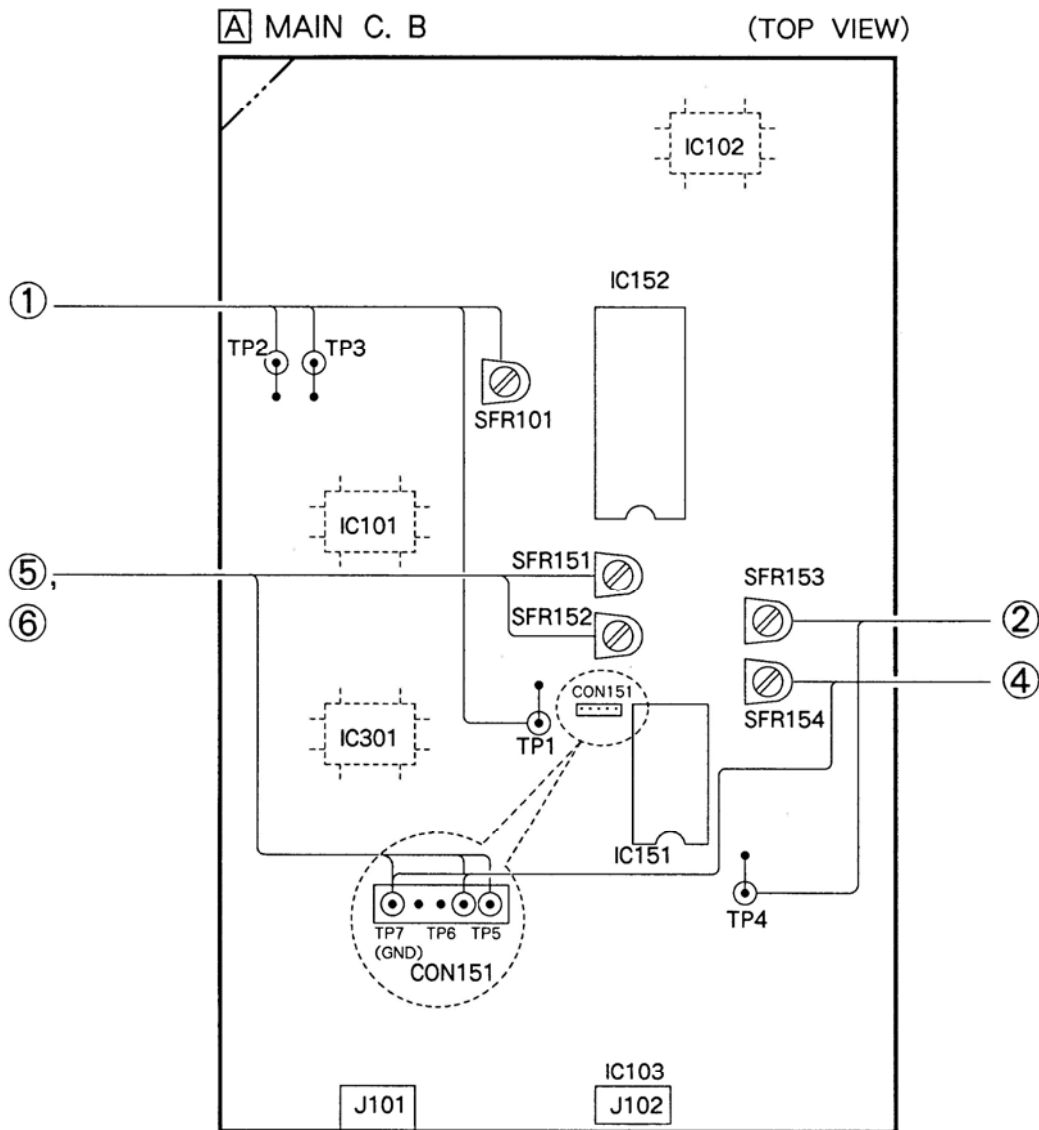


25

26

27

# ADJUSTMENT



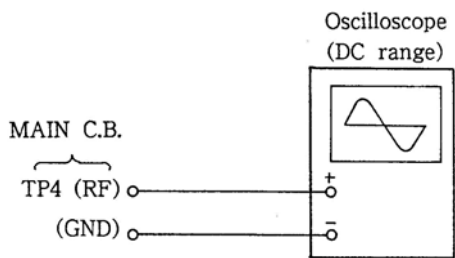
Note : Connect a probe (10 : 1) of the frequency counter or the oscilloscope to a test point.

## ① VCO Frequency Adjustment

1. Connect and short between TP1 and CHASSIS (GND).
2. Connect the frequency counter to test points TP2 (VCO) and TP3 (GND).
3. Adjust SFR101 (VCO) so that the frequency counter reading is  $4.32 \pm 0.01$  MHz.
4. After the adjustment is completed, remove the short lead wire from TP1 and CHASSIS (GND).

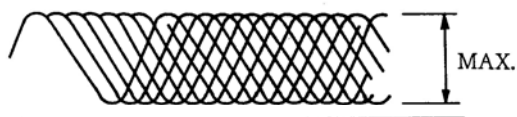
## ② Focus Bias Adjustment

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



1. Connect an oscilloscope to test points TP4 (RF) and GND.
2. Turn on the power switch.
3. Insert test disc YEDS-18 (YEDS-1) and play back the second composition.
4. Adjust SFR153 (F.B) so that the amplitude of waveform on the oscilloscope is maximized.

RF signal waveform



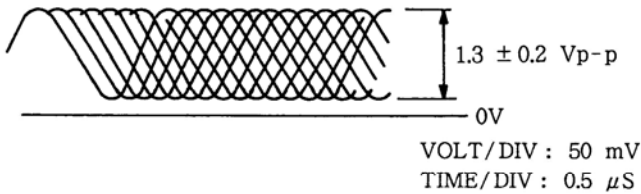
VOLT/DIV : 50 mV  
TIME/DIV : 0.5  $\mu$ S

### ③ RF Waveform Check

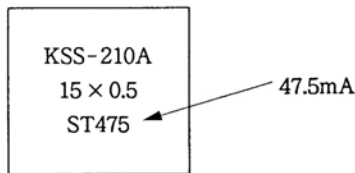
This check should be performed whenever the optical block is replaced in repair.

1. Connect an oscilloscope to test points TP4 (RF) and GND.
2. Turn on the power switch.
3. Insert test disc YEDS-18 (YEDS-1) and play back the second composition.
4. Check that the waveform appears as shown in the figure below.

RF signal waveform

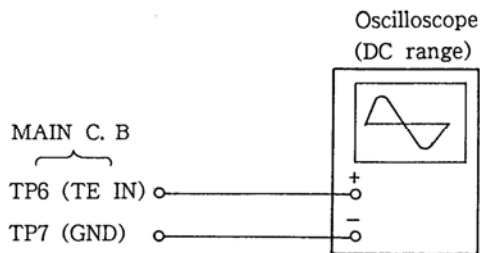


Note : The current of the laser signal can be checked with the voltages on both sides of R171 (22 Ω). The difference for the specified value shown on the label must be within ± 6.0 mA.

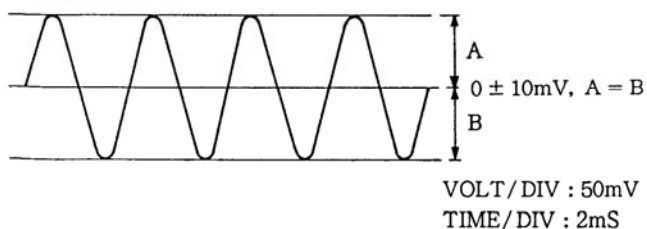


$$\text{Laser current } I_{op} = \frac{\text{Voltage across R171}}{22 \Omega}$$

### ④ Tracking Balance Adjustment



1. Connect an oscilloscope to TP6 (TE IN), TP7 (GND).
2. Turn on the power switch.
3. Insert the disc YEDS-18 (YEDS-1) TRACK No.2 and press the ► PLAY button.
4. Connect center pin SFR152 (TE) to ground.
5. Adjust SFR154 (RB) so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.



6. After adjustment, remove the grounding lead wire.

### ⑤, ⑥ Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

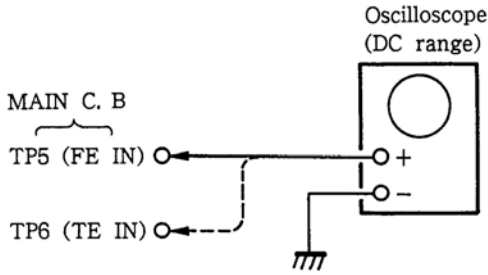
Symptoms	Gain	Focus	Tracking
● The time until music starts becomes longer for STOP → ► PLAY or automatic selection (◀◀, ▶▶ buttons pressed.) (Normally takes about 2 seconds.)		low	low or high
● MUSIC does not start and disc continues to rotate for STOP → ► PLAY or automatic selection (◀◀, ▶▶ buttons pressed.)		—	low
● Disc table opens shortly after STOP → ► PLAY.		low or high	—
● Sound is interrupted during PLAY. Or time counter display stops progressing.		—	low
● More noise during 2-axis device operation.		high	high

The following is a simple adjustment method.

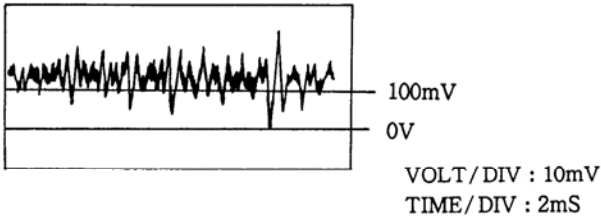
-Simple Adjustment-

Note : Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

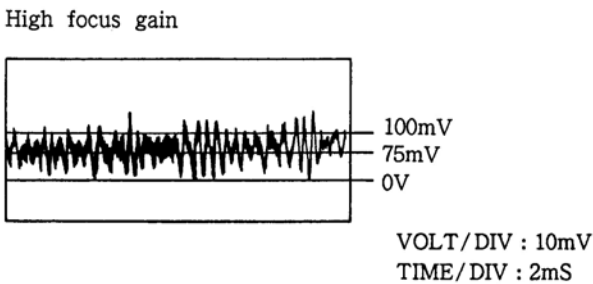
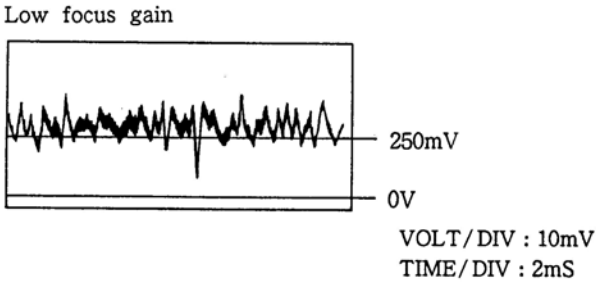
Procedure :



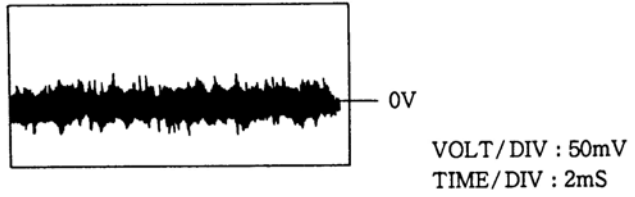
1. Keep the set horizontal.  
If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.
2. Insert the disc YEDS-18 (YEDS-1) TRACK No.2 and press the ►PLAY button.
3. Connect an oscilloscope to TP5 (FE IN).
4. Adjustment SFR151 (FE) so that the waveform is as shown in the figure below.  
(focus gain adjustment)



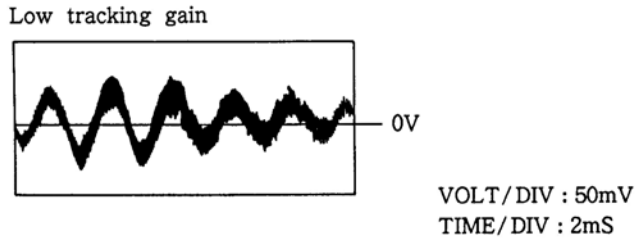
- Incorrect Examples (DC level changes more than on-adjusted waveform)



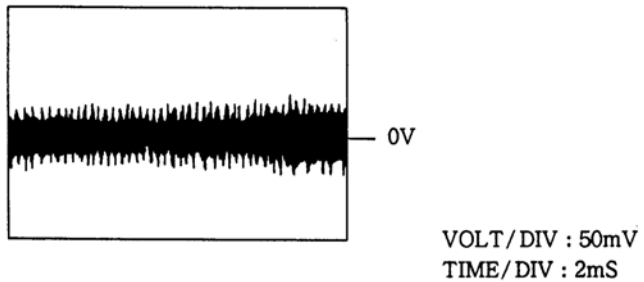
5. Connect an oscilloscope to TP6 (TE IN).
6. Adjust SFR152 (TE) so that the waveform is as shown in the figure below.  
(tracking gain adjustment)



- Incorrect Example (fundamental wave appears)

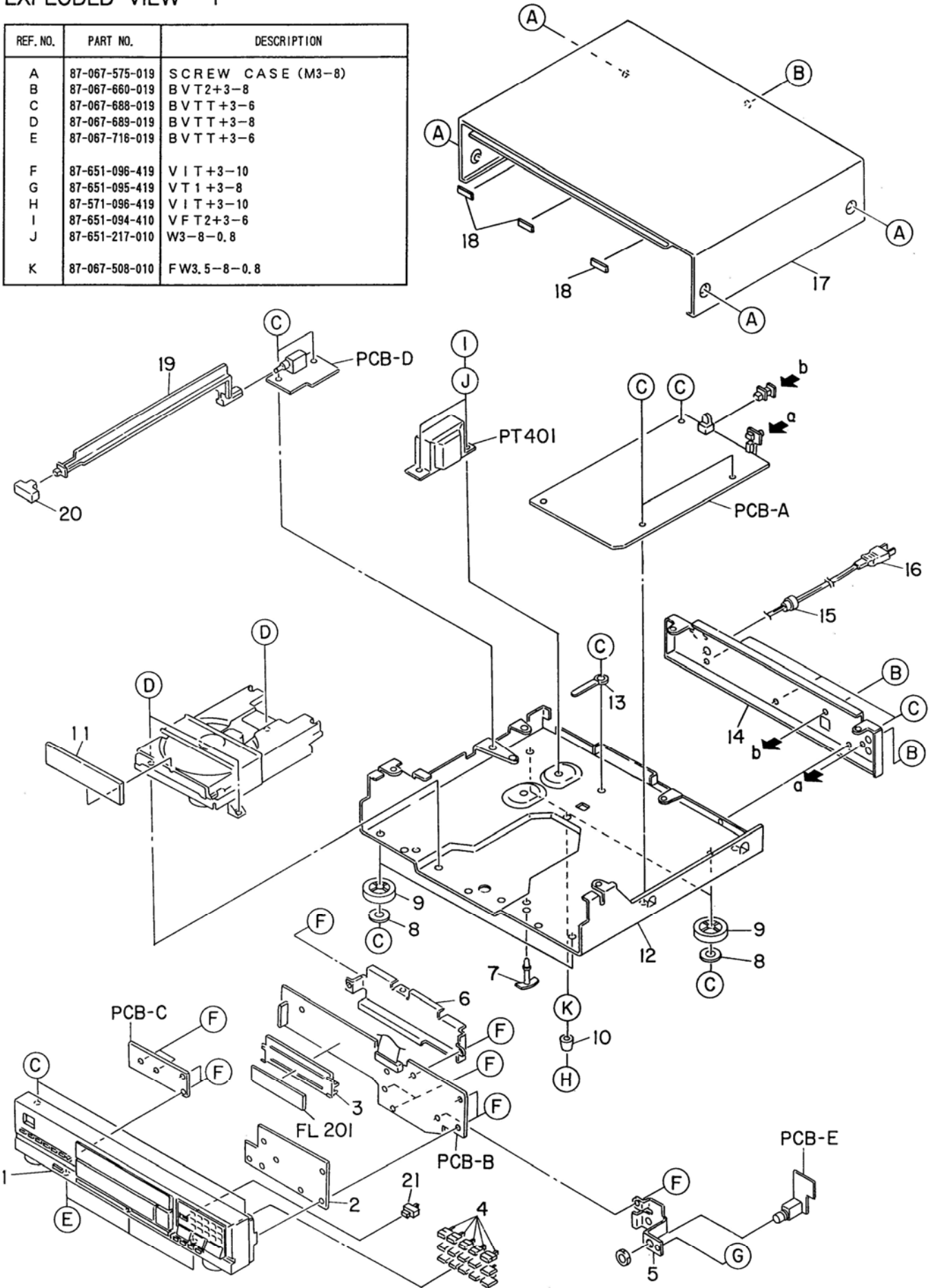


- High tracking gain  
(higher fundamental wave than for low gain)



# EXPLODED VIEW - 1

REF. NO.	PART NO.	DESCRIPTION
A	87-067-575-019	SCREW CASE (M3-8)
B	87-067-660-019	BVT2+3-8
C	87-067-688-019	BVTT+3-6
D	87-067-689-019	BVTT+3-8
E	87-067-716-019	BVTT+3-6
F	87-651-096-419	VIT+3-10
G	87-651-095-419	VT 1+3-8
H	87-571-096-419	VIT+3-10
I	87-651-094-410	VFT2+3-6
J	87-651-217-010	W3-8-0.8
K	87-067-508-010	FW3.5-8-0.8



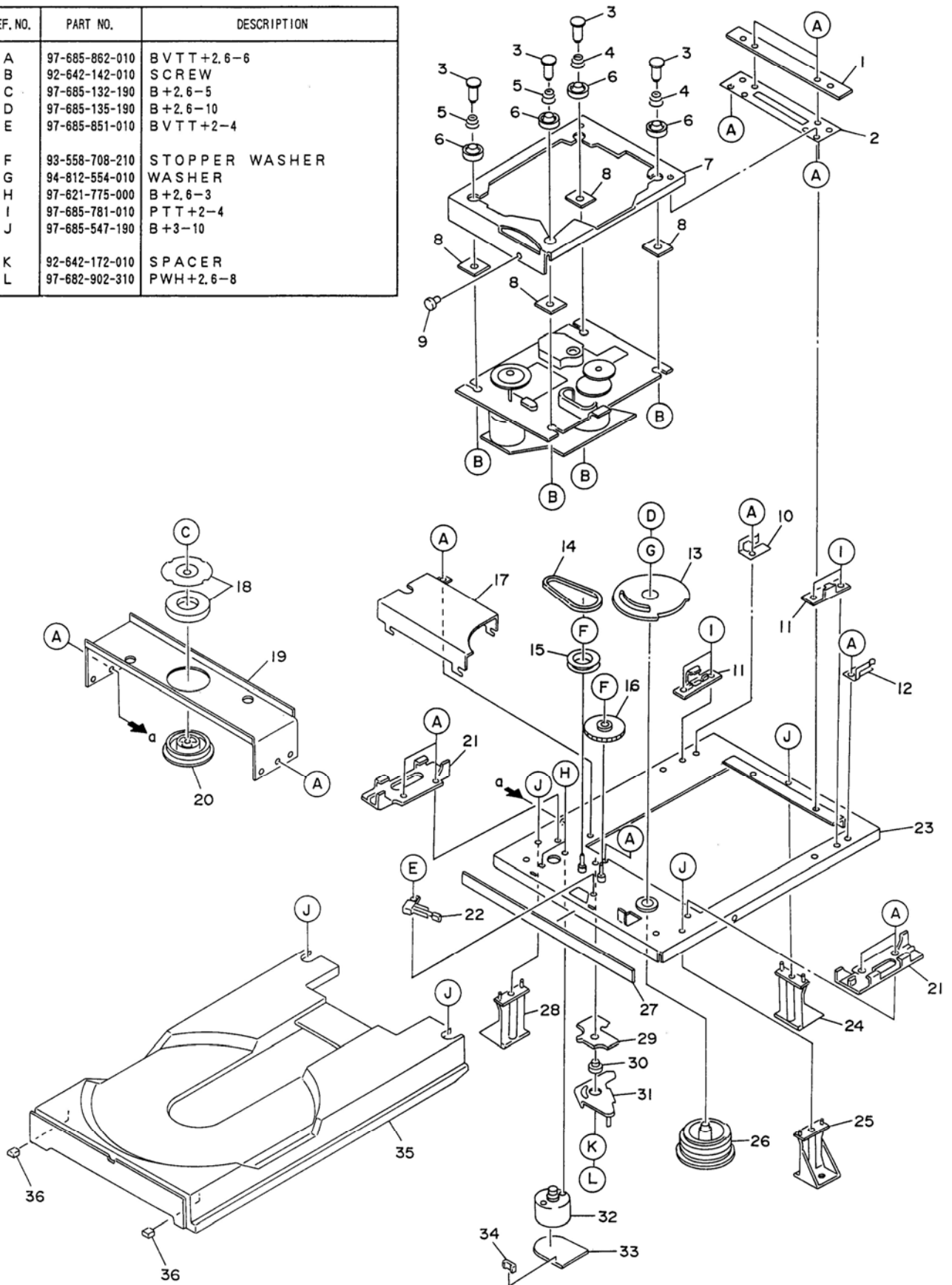
# MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q' TY
	1-1	★09-057-081-010	FRONT CABINET ASSY	※	1
	1-2	★89-AC1-206-019	CUSHION, 70-150-1		1
	1-3	★89-AC2-201-019	GUIDE, FL		1
	1-4	★84-761-014-019	BUTTON, PUSH 10KEY		15
	1-5	★89-AC1-210-018	HOLDER, HP		1
	1-6	★89-AC1-209-018	HOLDER, FRONT		1
	1-7	---	PCB HOLDER LSR-12R		1
	1-8	★84-761-008-019	CUSHION, FOOT		4
	1-9	★84-738-022-010	FOOT		4
	1-10	★87-085-208-010	FOOT ASSY		1
	1-11	★80-AC3-002-019	PANEL, TRAY	※	1
	1-12	---	CHASSIS, AMP		1
	1-13	---	WIRE BINDER		1
	1-14	★80-AC3-015-019	PANEL, REAR (E)	※	1
	1-14	★80-AC3-016-019	PANEL, REAR (K)	※	1
	1-15	★87-085-185-010	BUSHING, AC		1
	1-16	★87-034-781-010	AC CORD (E)		1
	1-16	★87-034-592-010	AC CORD (K)		1
	1-17	★80-AC3-011-010	CABINET, STEEL	※	1
	1-18	★84-736-229-010	CLOTH, 20-15-0.5		3
	1-19	★84-761-207-119	ROD		1
	1-20	★84-761-024-019	BUTTON, PUSH POWER		1
	1-21	★89-AC1-010-019	BUTTON, CAL		1



# EXPLODED VIEW - 2

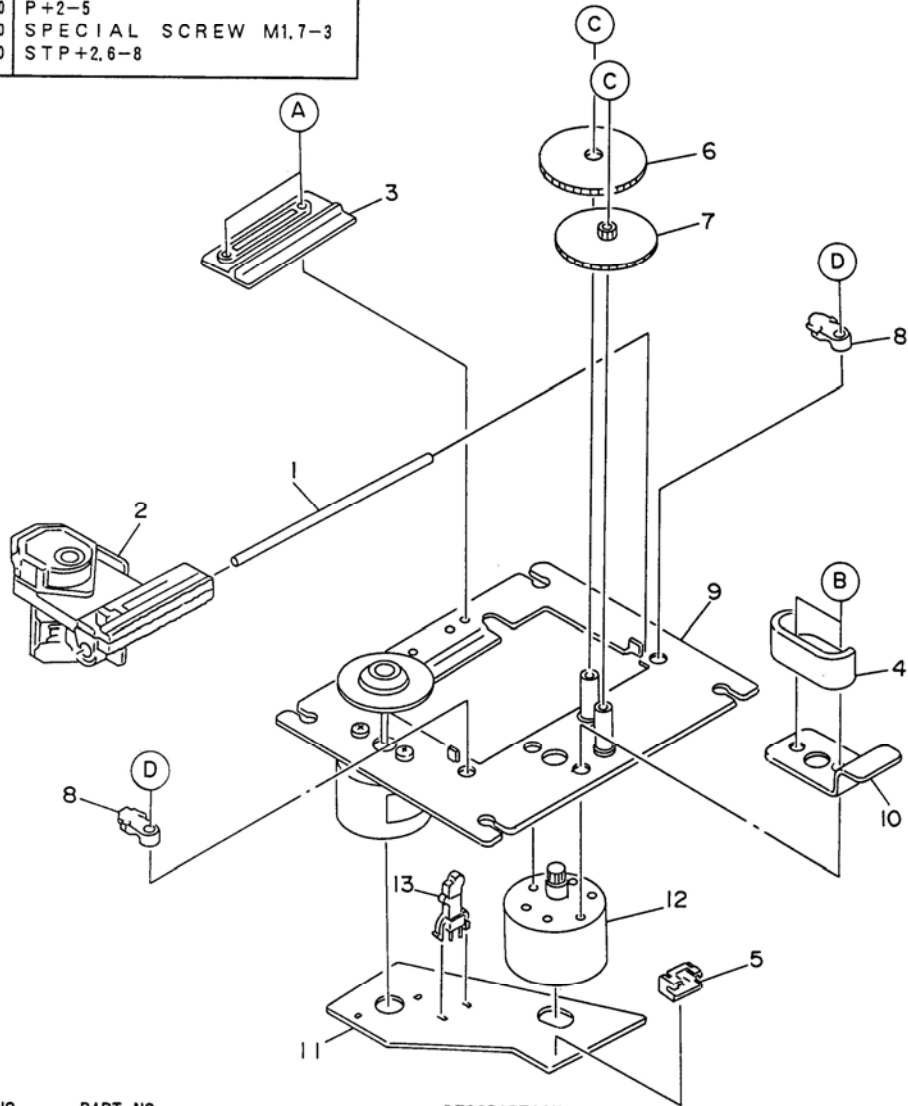
REF. NO.	PART NO.	DESCRIPTION
A	97-685-862-010	BVTT+2.6-6
B	92-642-142-010	SCREW
C	97-685-132-190	B+2.6-5
D	97-685-135-190	B+2.6-10
E	97-685-851-010	BVTT+2-4
F	93-558-708-210	STOPPER WASHER
G	94-812-554-010	WASHER
H	97-621-775-000	B+2.6-3
I	97-685-781-010	PTT+2-4
J	97-685-547-190	B+3-10
K	92-642-172-010	SPACER
L	97-682-902-310	PWH+2.6-8



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q' TY
	2-1	★92-642-170-010	HOLDER, HINGE		1
	2-2	★92-642-164-010	SPRING, HINGE		1
	2-3	★92-642-160-010	SHAFT, SPRING T		4
	2-4	★92-642-137-010	SPRING, COIL B		2
	2-5	★92-642-139-010	SPRING, COIL A		2
	2-6	★92-642-158-010	FOOT, C		4
	2-7	★9X-264-210-510	SPRING SUB CHASSIS ASSY		1
	2-8	★92-642-159-010	PLATE, SPRING T		4
	2-9	★92-642-169-010	ROLLER		1
	2-10	★92-642-147-010	GUIDE, TRAY L		1
	2-11	★92-042-102-030	HOLDER, TRAY		2
	2-12	★92-642-146-010	GUIDE, TRAY R		1
	2-13	★92-642-154-020	GEAR, SPRING DRIVE		1
	2-14	93-053-307-010	BELT, LM		1
	2-15	★94-913-731-010	PULLEY, LOADING		1
	2-16	★92-642-148-010	GEAR, SPRING RELAY		1
	2-17	★92-642-149-010	COVER, SPRING GEAR		1
	2-18	9X-264-210-810	MAGNET ASSY		1
	2-19	★92-642-165-010	CHASSIS, CHUCK		1
	2-20	★92-642-181-010	PULLEY, CHUCKING		1
	2-21	★92-642-161-010	HOLDER, FRONT TRAY		2
	2-22	91-572-052-110	SWITCH, LEAF (OPEN/CLOSE)		1
	2-23	★9X-264-210-610	SPRING MAIN CHASSIS ASSY		1
	2-24	★92-642-512-010	HOLDER, MD BOSS REAR		1
	2-25	★92-642-510-010	HOLDER, MD BOSS		1
	2-26	★92-642-153-010	CAM, SPRING CONTROL		1
	2-27	★92-642-157-030	TAPE, FRONT		1
	2-28	★92-642-511-010	HOLDER, MD BOSS L		1
	2-29	★92-642-173-010	PLATE, RING		1
	2-30	★92-642-133-020	BOSS		1
	2-31	★9X-264-210-910	STOPPER RING ASSY		1
	2-32	9X-264-133-610	MOTOR ASSY (LOADING)		1
	2-33	★91-624-793-210	CD MOTOR 2 C.B		1
	2-34	★91-564-721-110	CONNECTOR, PIN 5 P		1
	2-35	★92-642-156-010	TRAY		1
	2-36	★92-642-125-010	DAMPER		2

# EXPLODED VIEW - 3

REF. NO.	PART NO.	DESCRIPTION
A	92-641-386-010	PTT+2-5
B	97-621-255-350	P+2-5
C	93-303-809-310	SPECIAL SCREW M1.7-3
D	92-641-447-010	STP+2.6-8



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	3-1	★94-910-431-010	SHAFT, SLIDE		1
	3-2	98-848-127-310	PICK UP (KSS-210ASRP)		1
	3-3	★92-641-443-020	HOLDER, SLIDE		1
	3-4	★92-641-434-010	COVER, GEAR		1
	3-5	★92-564-720-110	CONNECTOR, PIN		1
	3-6	★92-641-404-020	GEAR, A		1
	3-7	★92-641-403-050	GEAR, B		1
	3-8	★92-641-448-020	CLAMP, SHAFT		2
※	3-9	9X-264-133-710	SP MOTOR ASSY (W/CHASSIS, T. T)(DISC)(RF-310T-11400)		1
※	3-9	9X-264-135-810	SP MOTOR ASSY (W/CHASSIS, T. T)(DISC)(MDN-4RA3NTAS)		1
	3-10	★92-641-371-010	STOPPER		1
※	3-11	★91-625-848-110	CD MOTOR 1 C. B (RF-310T-11400)		1
※	3-11	★91-628-263-110	CD MOTOR 1 C. B (MDN-4RA3NTAS/4RA3ETA)		1
※	3-12	9X-264-077-010	SLED MOTOR GEAR ASSY (SLED)(RF-310T-11400)		1
※	3-12	9X-264-134-410	SLED MOTOR GEAR ASSY (SLED)(MDN-4RA3ETA)		1
	3-13	91-572-053-110	SWITCH, LEAF (LIMIT)		1

※Caution

Two Types of the spindle (DISC) motor and sled motor are used, but they are not compatible.  
Check the part numbers (MDN ..., RF ...) on the labels of motors and replace motors with the same one.