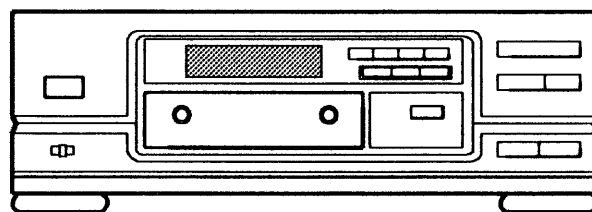


AIWA®

DX-M73

SERVICE MANUAL



COMPACT DISC PLAYER

• BASIC CD MECHANISM : KSL - 150AFM

• TYPE. Y,YE,YK

◆ DX - M73 is the Compact Disc Player which is connected to CX - 76M only.

SPECIFICATIONS

Type:	Compact disc digital audio system
Disc:	Compact disc
Scanning method:	Non contact optical scanner
Laser:	Semiconductor type ($\lambda=780$ nm)
Rotation speed:	Approx. 500 rpm - 200 rpm (CLV)
Error correction:	Cross Interleave Reed Solomon code
No. of channels:	2 channel
D-A conversion:	16-bit linear
Wow/Flutter:	Unmeasurable
Frequency response:	10 Hz - 20 kHz, ± 1 dB
Harmonic distortion:	0.015% (1 kHz, 0 dB)
Dynamic range:	92 dB
Channel separation:	84 dB (1 kHz, 0 dB)
S/N ratio:	96 dB (1 kHz)
Power supply:	Supplied from the main unit
Dimensions:	360 (W) $\times$ 122 (H) $\times$ 309 (D) mm
Weight:	3.5 kg

• Design and specifications are subject to change without notice.

AIWA Co., Ltd.

Tokyo Japan

Printed in Japan

CAUTIONS WHEN SERVICING

The DX-M73 has no power supply circuit. Power should be supplied from CX-76M using an 11-core flat cable. During repair, connect DX-M73 to the CX-76M to supply the power. When there is no CX-76M, supply the power in the manner below.

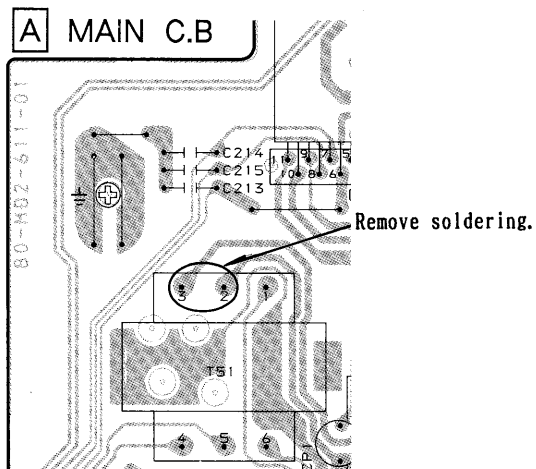
(When repairing without CX-76M)

1. Remove soldering from ② and ③ terminals of T51 not to flow DC through T51.

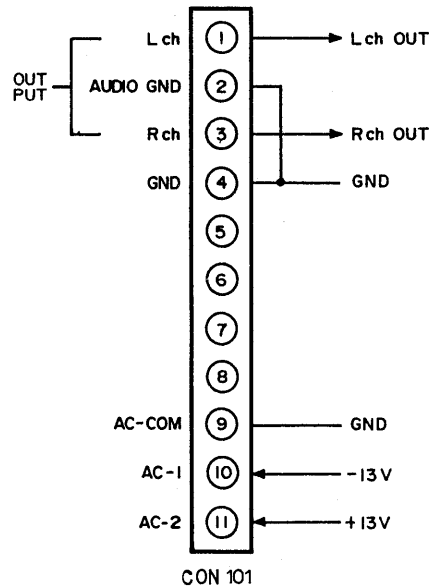
Note: If the two terminals of T51 are not in non-conductive made, the Multi-Power Supply is failed.

2. Connect the Multi-Power Supply(LPS-9088) in the manner below.

• FL501 does not light, as AC power for FL501 is not supplied.



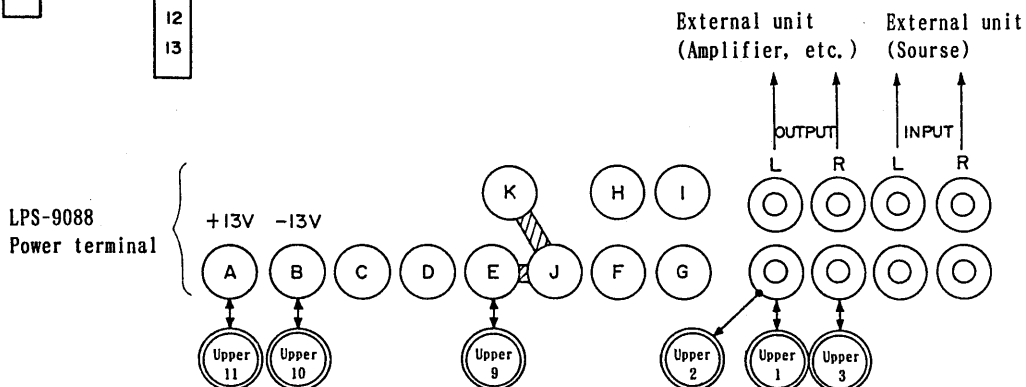
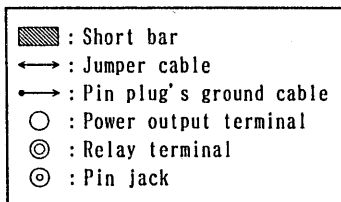
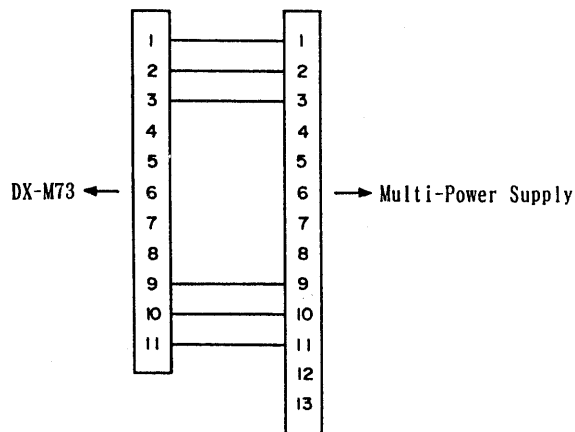
The voltages below are supplied to each terminal from the external power source.



3. Multi-Power (LPS-9088) Connection

Connect to J1 of the LPS-9088 using a multi-conversion harness.

Conversion harness connection



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 set and turn the cam in the direction of the arrow to eject the "Tray".

(See Figure - 1)

3) Remove "MAIN C.B" and loosen 2 screws (B) and pull out the "Tray" toward you.(See Figure - 2)

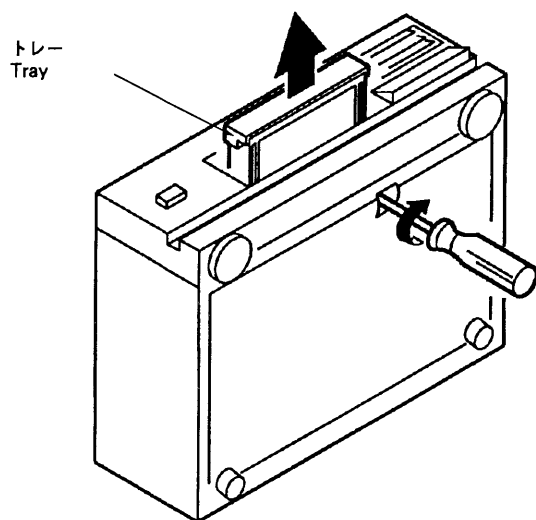


Fig - 1

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

1) Remove 2 screws (A) and remove "MAIN C.B".

2) Loosen 2 screws (B), remove 3 screws (C) and remove "CD Mechanism" .

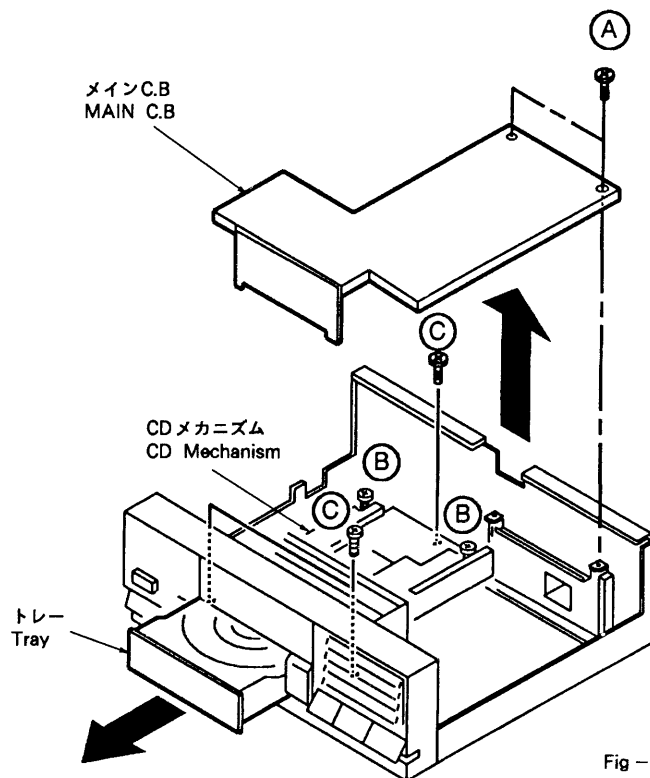


Fig - 2

ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q , TY
	1	★ 80 - MD2 - 901 - 019	INSTRUCTION BOOKLET, Y N (Y)	※	1
	2	★ 80 - MD2 - 902 - 018	INSTRUCTION BOOKLET, Y NE (YE,YK)	※	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 alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

WARNING!

Osynlig laserstrålning 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.

CLASS 1
LASER PRODUCT

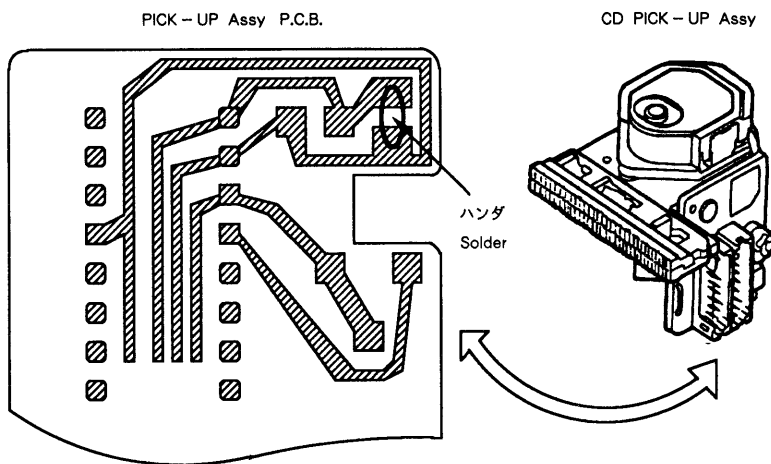
LUOKAN 1
LASERLAITE

KLASS 1
LASER APPARAT

Precaution to replace Optical block (KSS - 150A)

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===

87-001-184-010 IC, CXA1081S
87-020-794-010 IC, CXA1082BQ
87-001-944-010 IC, CXD1167Q
80-MD2-605-010 IC, CXP5058H-567Q

87-001-196-019 IC, ICPN10
87-001-132-019 IC, ICPN38
87-001-173-019 IC, LA6510
87-027-895-019 IC, M5218L

87-027-986-019 IC, NJM4560SA
87-020-881-019 IC, NJM78LQ5A
87-001-169-010 IC, STA341M
87-001-865-010 IC, TDA1543A

===TRANSISTOR===

89-112-964-019 TRANSISTOR, 2SA1296Y
89-213-702-019 TRANSISTOR, 2SB1370E
89-318-155-019 TRANSISTOR, 2SC1815GR
89-320-011-019 TRANSISTOR, 2SC2001K

89-420-612-019 TRANSISTOR, 2SD2061E
87-026-216-019 TRANSISTOR, DTA124ES
87-026-219-019 TRANSISTOR, DTA144ES

87-026-464-019 TRANSISTOR, DTC114TS
87-026-218-019 TRANSISTOR, DTC144ES

===DIODE===

87-027-376-019 DIODE, 1B4B41
87-001-559-019 DIODE, 1SS131
87-020-110-019 DIODE, 1SS177
87-020-992-019 DIODE, MPG-06D

87-027-451-019 DIODE, ZENER HZ27-2L
87-001-566-019 DIODE, ZENER HZ2B-1
87-027-332-019 DIODE, ZENER HZ6B1L

===MAIN CIRCUIT BOARD SECTION===

C1 *87-010-262-019 CAP, ELECT 3300-16V SME
C2 *87-015-997-019 CAP, ELECT 2200-16V SME
C3 *87-018-134-019 CAP, CERA-SOL U 0.01-16 Y
C4 *87-010-263-019 CAP, ELECT 100-10V SME

C5 *87-010-263-019 CAP, ELECT 100-10V SME
C51 *87-010-247-019 CAP, ELECT 100-50V SME
C53 *87-010-409-019 CAP, ELECT 220-50V SME
C54 *87-010-382-019 CAP, ELECT 22-25V SME

C55 *87-010-382-019 CAP, ELECT 22-25V SME
C101 *87-018-131-019 CAP, CERA-SOL U 1000P-50 B
C102 *87-018-131-019 CAP, CERA-SOL U 1000P-50 B
C107 *87-010-405-019 CAP, ELECT 10-50V SME

C108 *87-010-405-019 CAP, ELECT 10-50V SME
C111 *87-014-039-019 CAP, PP 180P-100 J
C112 *87-014-039-019 CAP, PP 180P-100 J
C113 *87-010-263-019 CAP, ELECT 100-10V

C114 *87-010-263-019 CAP, ELECT 100-10V
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 *87-018-131-019 CAP, CERA-SOL U 1000P-50 B

C118 *87-018-131-019 CAP, CERA-SOL U 1000P-50 B
C120 *87-018-209-019 CAP, CERA-SOL U 0.1-50 F
C121 *87-010-248-019 CAP, ELECT 220-10V SME
C123 *87-018-131-019 CAP, CERA-SOL U 1000P-50 B

C201 *87-018-134-019 CAP, CERA-SOL U 0.01-16 Y
C202 *87-018-134-019 CAP, CERA-SOL U 0.01-16 Y
C203 *87-010-374-019 CAP, ELECT 47-10V
C204 *87-010-404-019 CAP, ELECT 4.7-50V SME

C210 *87-018-134-019 CAP, CERA-SOL U 0.01-16 Y
C211 *87-018-209-019 CAP, CERA-SOL U 0.1-50 F
C213 *87-018-131-019 CAP, CERA-SOL U 100P-50 B
C214 *87-018-119-019 CAP, CERA-SOL U 100P-50 B

REF. NO. PART NO. DESCRIPTION

C215 *87-018-119-019 CAP, CERA-SOL U 1000P-50 B
C250 *87-018-209-019 CAP, CERA-SOL U 0.1-50 F
C351 *87-010-374-019 CAP, ELECT 47-10V
C352 *87-018-134-019 CAP, CERA-SOL U 0.01-16 Y

C353 *87-018-111-019 CAP, CERA-SOL U 27P-50 SL
C354 *87-018-111-019 CAP, CERA-SOL U 27P-50 SL
C355 *87-010-400-019 CAP, ELECT 0.47-50V SME
C357 *87-018-134-019 CAP, CERA-SOL U 0.01-16 Y

C359 *87-018-119-019 CAP, CERA-SOL U 1000P-50 B
C360 *87-018-209-019 CAP, CERA-SOL U 0.1-50 F
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
C401 *87-018-132-019 CAP, CERA-SOL U 2200P-16 X
C402 *87-018-134-019 CAP, CERA-SOL U 0.01-16 Y
C408 *87-010-404-019 CAP, ELECT 4.7-50V SME

C410 *87-010-545-019 CAP, ELECT 0.22-50V SME
C411 *87-010-404-019 CAP, ELECT 4.7-50V SME
C413 *87-010-401-019 CAP, ELECT 1-50V SME
C414 *87-010-404-019 CAP, ELECT 4.7-50V SME

C415 *87-018-133-019 CAP, CERA-SOL U 4700P-16 X
C416 *87-010-382-019 CAP, ELECT 22-25V SME
C417 *87-010-263-019 CAP, ELECT 100-10V
C418 *87-010-263-019 CAP, ELECT 100-10V

C422 *87-018-205-019 CAP, CERA-SOL U 0.022-25 F
C423 *87-018-209-019 CAP, CERA-SOL U 0.1-50 F
C424 *87-018-209-019 CAP, CERA-SOL SS 0.1
C451 *87-018-132-019 CAP, CERA-SOL U 2200P-16 X

C453 *87-010-374-019 CAP, ELECT 47-10V
C457 *87-010-263-019 CAP, ELECT 100-10V
C459 *87-010-793-019 CAP, ELECT BP 0.47-50V SRA
C460 *87-015-684-019 CAP, ELECT 47-25V

C461 *87-015-684-019 CAP, ELECT 47-25V
C462 *87-010-263-019 CAP, ELECT 100-10V
C463 *87-010-374-019 CAP, ELECT 47-10V
C491 *87-018-134-019 CAP, CERA-SOL U 0.01-16 Y

FL501 *89-VX5-616-010 FL, 9-BT-65G(DISPLAY)
△FR1 87-029-125-019 RES, FUSE 1-1/4W
△FR2 87-029-124-019 RES, FUSE 2.2-1/4W
L101 *87-005-406-019 COIL CHOKE 560UH

L102 *87-005-406-019 COIL CHOKE 560UH
L103 *87-003-147-019 COIL CHOKE 22UH
L201 *87-003-147-019 COIL CHOKE 22UH
L451 *87-003-147-019 COIL CHOKE 22UH

SFR401 *87-024-173-019 SFR, 22K
SFR402 *87-024-173-019 SFR, 22K
SFR403 *87-024-169-019 SFR, 2.2K
SFR451 *87-024-173-019 SFR, 22K

SFR452 *87-024-173-019 SFR, 22K
T51 *89-VX5-627-019 TRANSFORMER FL
X201 *87-008-394-019 CERAMIC CST 4.19MGW
X351 *84-719-610-019 CRYSTAL 8.4672MHZ

===FRONT CIRCUIT BOARD SECTION===

SW501 87-036-142-019 TACT SW(DISPLAY)
SW502 87-036-142-019 TACT SW(REPEAT/BLANK)
SW503 87-036-142-019 TACT SW(PRG/CHK)
SW504 87-036-142-019 TACT SW(DELETE)

SW505 87-036-142-019 TACT SW(STOP/CLEAR)
SW506 87-036-142-019 TACT SW(PAUSE)
SW507 87-036-142-019 TACT SW(PLAY/REPLAY)
SW508 87-036-142-019 TACT SW(AUTO)

SW509 87-036-142-019 TACT SW(RANDOM)
SW510 87-036-142-019 TACT SW(OPEN/CLOSE)
SW511 87-036-142-019 TACT SW(◀/▶)
SW512 87-036-142-019 TACT SW(▶/▶▶)

SW513 87-036-142-019 TACT SW(CONT)

REF. NO. PART NO. DESCRIPTION

===SWITCH CIRCUIT BOARD SECTION===

SW551 87-036-087-019 SLIDE SW(TIMER)
SW552 87-036-142-019 TACT SW(POWER)

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

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

SW1 91-572-053-110 LEAF SW(INSIDE LIMIT)

===MOTOR-2 CIRCUIT BOARD SECTION===

M3 9X-264-133-610 MOTOR ASSY(LOADING)

===MISCELLANEOUS===

98-848-046-510 PICK UP KSS-150A(H)(RP)
★89-VT5-202-010 BUSHING, CORD
89-VX5-618-010 FLAT CABLE 11P
SW2 91-571-312-119 LEAF SW(OPEN/CLOSE)

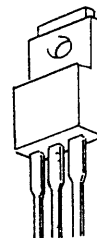


E C B

2SA1296

2SC1815

2SC2001



B C E

2SB1370

2SD2061



B C E

DTA124

DTA144

DTC114

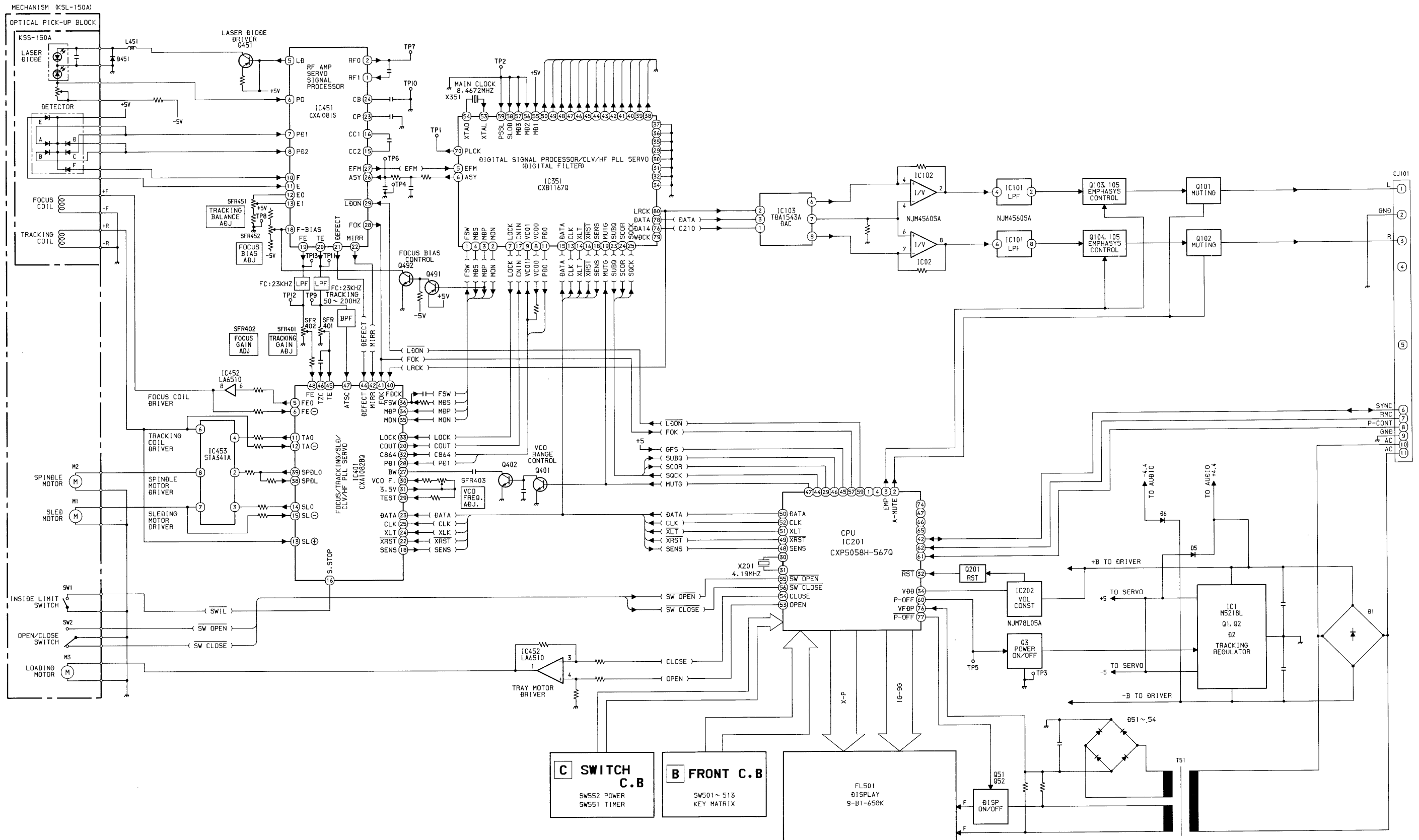
DTC144

※Caution

Two Types of the spindle (DISC) motor and sled motor are used, but they are not compatible.

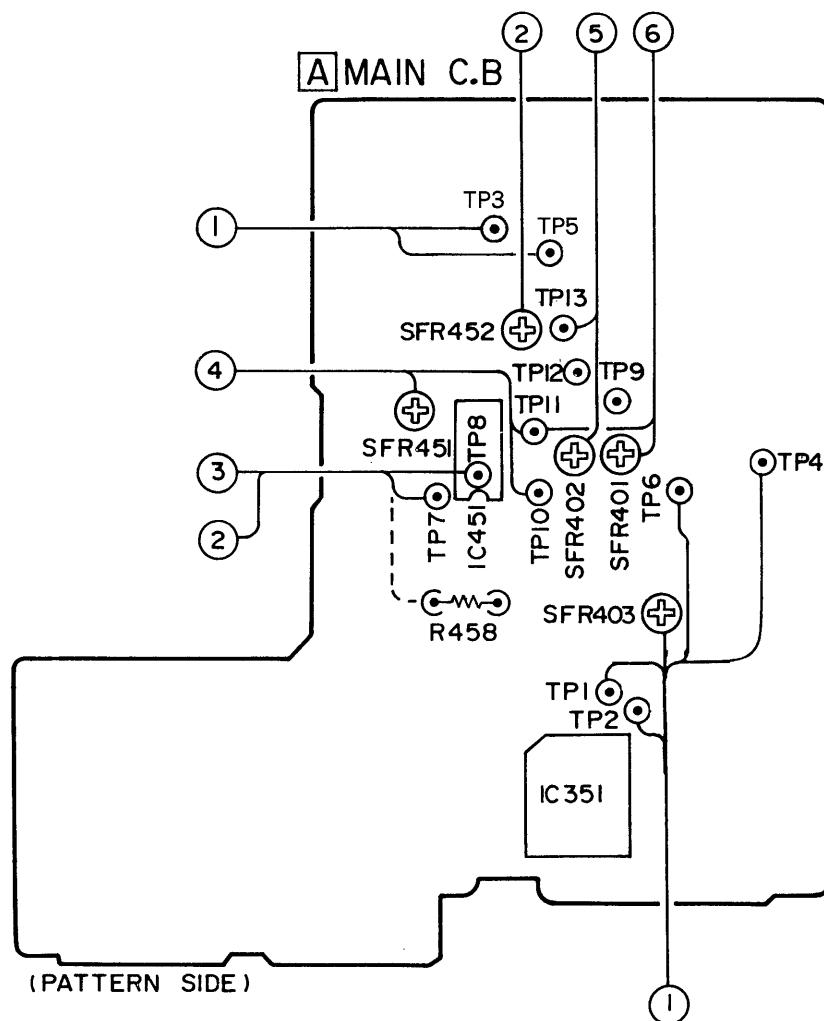
Check the part numbers (MDN, RF) on the labels of motors and replace motors with the same one.

BLOCK DIAGRAM





ADJUSTMENT



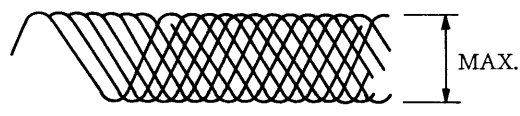
Note: Connect probe (10 : 1) of frequency counter and oscilloscope to test point.

1. VCO Frequency Adjustment

- (1) Short between test points TP5 (P ON) and TP3 (P ON GND) using a short.
- (2) Open the tray by pressing OPEN/CLOSE button.
- (3) Short between test points TP6 (ASY) and TP4 (GND) using a short lead wire.
- (4) Connect a frequency counter to TP1 (VCO) and TP2 (GND).
- (5) Adjust SFR403 (VCO) so that the frequency counter reading is $4.45 \pm 0.01\text{MHz}$.
- (6) After this adjustment, remove the short lead wire from TP6 (ASY) and TP4 (GND).
- (7) After this adjustment, remove the short lead wire from TP5 (P ON) and TP3 (P ON GND).

- (1) Connect an oscilloscope to TP7 (RF), TP8 (GND).
- (2) Turn on the power switch.
- (3) Insert the disc YEDS-18 (YEDS-1) TRACK No.2 and press the ►PLAY button.
- (4) Adjust SFR452 (FB) to make clear and maximize the waveform amplitude on the oscilloscope. Clear waveform means that diamond shape (◇) can be distinguished in the center of the waveform.

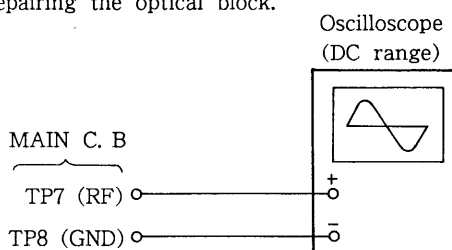
RF signal waveform



VOLT/DIV : 20mV
TIME/DIV : 0.5 μ sec

2. Focus Bias Adjustment

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

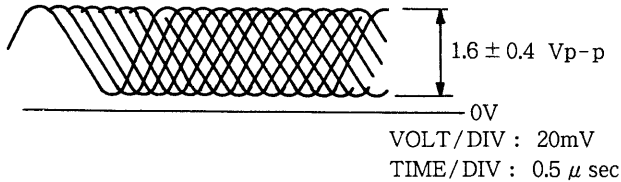


3. RF Waveform Check

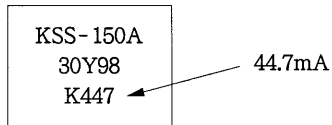
This check should be performed whenever the optical system block is replaced.

- (1) Connect the oscilloscope to TP7 (RF) and TP8 (GND).
- (2) Turn on the power switch.
- (3) Insert the disc YEDS-18 (YEDS-1) TRACK No.2 and press the ►PLAY button.
- (4) Adjust SFR in pick up so that the waveform on the oscilloscope is as shown in the figure below.

RF signal waveform

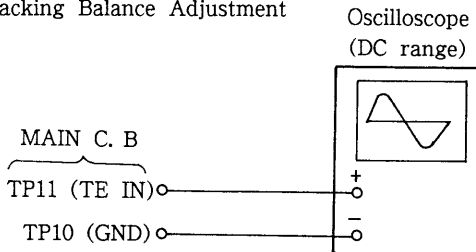


Note : The laser current can be checked using the voltage across R458 (10 Ω).
±6.0mA should be allowed to the current value on the label of the back of the laser pick-up.

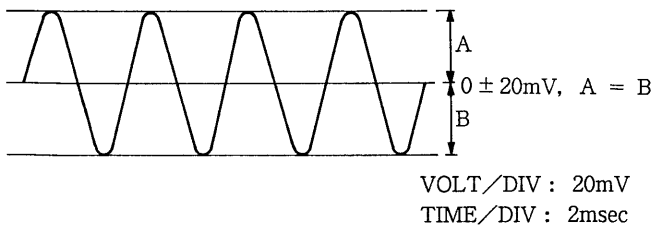


$$\text{Laser current } I_{op} = \frac{\text{Voltage across R458}}{10 \Omega}$$

4. Tracking Balance Adjustment



- (1) Connect the oscilloscope to TP11 (TE IN), TP10 (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 of SFR401 (TE) to ground.
- (5) Adjust SFR451 (TB) so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.



- (6) After adjustment, is completed, remove the ground 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.

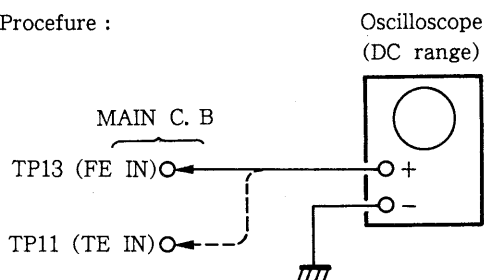
Symptoms	Gain	Focus	Tracking
● The time until music starts becomes longer for STOP→►PLAY or automatic selection (◀◀, ▶▶ buttons pressed.) (Normally takes about 2 seconds.)		low	low or high
● MUSIC does not start and disc continues to rotate for STOP→►PLAY or automatic selection (◀◀, ▶▶ buttons pressed.)		—	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.

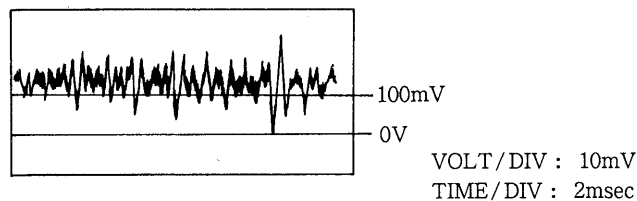
-Simple Adjutment-

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.

Procefure :

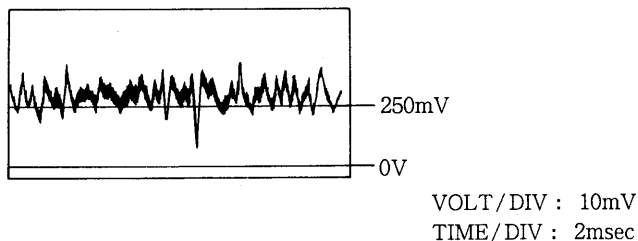


- (1) Keep the set horizontal.
If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.
- (2) Insert the disc YEDS-18 (YEDS-1) TRACK No.2 and press the ►PLAY button.
- (3) Connect an oscilloscope Main circuit board to TP13 (FE IN).
- (4) Adjustment SFR402 (FE) so that the waveform is as shown in the figure below.
(focus gain adjustment)

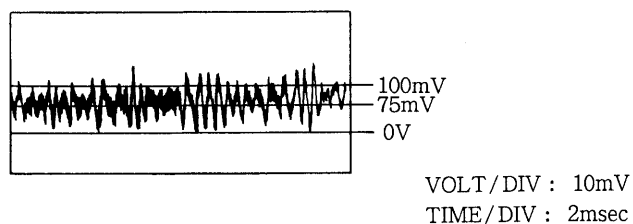


- Incorrect Examples (DC level changes more than -adjusted waveform)

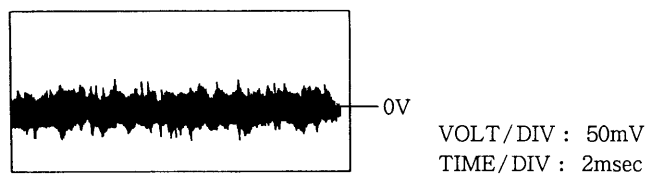
low focus gain



high focus gain

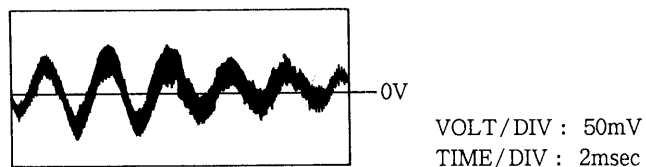


- (5) Connect an oscilloscope to Main circuit board TP11 (TE IN).
- (6) Adjust SFR401 (TE) so that the waveform is as shown in the figure below.
(tracking gain adjustment)

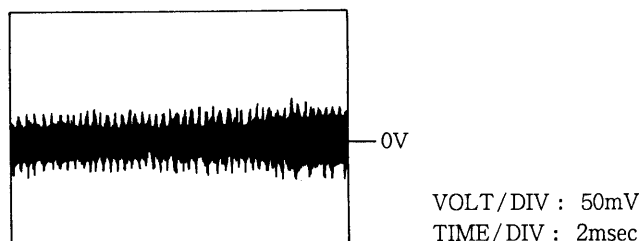


- Incorrect Example (fundamental wave appears)

low tracking gain



high tracking gain
(higher fundamental wave than for low gain)



IC DESCRIPTION

For the description of pins as shown below, see the manual of the XC-002.		
	DX-M73	XC-002
①	IC, CXA1082BQ	IC, CXA1082S
②	IC, CXA1081S	IC, CXA1081S

IC, CXP5058H-567Q

Pin No.	Pin Name	I/O	Description
1	H-SPD	O	Low in high-speed mode. (Reserved)
2	A-MUTE		Analog mute output. High when power is on.
3	EMPH		Emphasis switching output. High when emphasis is on.
4	H-EMPH		High when emphasis is on and in high-speed mode. (Reserved)
5	x	O	} Display segment output.
6	a		
7	b		
8	c		
9	d		
10	e		
11	f		
12	g		
13	y		
14	z		
15	p		
16~19	NC	—	Reserved.
20~28	9G~1G	O	Display grid scan output.
29	SCOR	I	Sub-code S0 + S1 input interrupt at the leading edge.
30	XTAL	—	Connected to the ceramic oscillator. 4.19 MHz
31	EXTAL	I	
32	RST	I	Reset input.
33	NC	—	Reserved.
34	VDD	—	Power input terminal. Connected to +B.
35~39	KEY1~KEY5	I	KEY input.
40	EOP·OFF	—	Connected to +B.
41	NC	—	Reserved.
42	SYNC	I/O	Sync. signal to other components input or output. (8-bit serial)
43	NC	—	Reserved.
44	SQCK	I	Sub-code Q read and clock input.
45	GFS		Display signal input for frame sync. lock status.
46	SUBQ		Sub-code Q input.

Pin No.	Pin Name	I/O	Description
47	MUTG	O	Muting output to DSP.
48	SENS	I	Connected to DSP SENS terminal.
49	$\overline{\text{XRST}}$	O	System reset output.
50	DATA	O	Serial data output to DSP.
51	XLT	O	Data latch output.
52	CLK		Data transmission clock.
53	OPEN		Tray open output. High when opening.
54	CLOSE		Tray close output. High when closing.
55	$\overline{\text{SW OPEN}}$	I	Tray open detection switch. Low when the tray is open.
56	$\overline{\text{SW CLOSE}}$		Tray open detection switch. Low when the tray is closed.
57	FOK		Indicates the status of focus. High when in focus.
58	P · S MODE		P · S 1 mode: High when peak search is performed every recording. P · S 2 mode: Low when If the disc has not been changed and the program has not been revised, only the peak point is played back.
59	$\overline{\text{LDON}}$	O	Laser diode ON/OFF output. Low when the laser diode is on.
60	P-OFF	O	System ON/OFF output. High when power is off or STOP Mode.
61	P-CONT	I	System ON/OFF output from other components.
62	RMC	I	42-bit serial remote control input.
63	NC	—	Reserved.
64	RANDOM	O	Indicates random play operation. High in random mode. (Reserved)
65	$\overline{\text{P} \cdot \text{HOLD}}$		Holds the peak of input signal from other components in the peak search mode. High when peak search mode. (Reserved)
66	$\overline{\text{AD START}}$		Initial signal and AD START pulse output to the A/D conversion circuit. (Reserved)
67	$\overline{\text{COMP}}$	I	Timing signal input for A/D conversion. (Reserved)
68	$\overline{\text{T-RANDOM}}$		Random switch input. Low during random play and timer random play.
69	$\overline{\text{T-PLAY}}$		Timer play mode switch input. Low in timer play mode.
70	$\overline{\text{PSW}}$		Power switch input. ON/OFF (STAND BY) is switched.
71	GND	—	Connected to GND.
72	NC	—	Reserved.
73	NC	—	Reserved.
74	WDCK	I	Reference clock input for the peak search (AD conversion circuit)
75	VREF	—	Connected to +B.
76	VFDP	—	Power input for FL tube display output. Connected to -B.
77	$\overline{\text{P-OFF}}$	O	Low when power is off.
78	8/12		High when the play time of the disc is less than 23 minutes. (Reserved)
79	NC	—	Reserved.
80	NC	—	Reserved.

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. $f = 8.6436\text{MHz}$
9	VCOI	I	VCO input.
10	TEST	—	Connected to GND. (0V)
11	PDO	O	Phase comparison output between the EFM signal and VCO/2.
12	VSS	—	Connected to GND. (0V)
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	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".
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 +5V)
27	DOTX	O	Digital audio interface output. (Reserved)
28	GFS	O	Display output of the frame sync locking state. Goes "H" when locked.
29 32	TEST	—	Connected to GND. (Do not open)

Pin No.	Pin Name	I/O	Description
33	VDD	—	Power supply (+5V)
34 50	TEST	—	Connected to GND. (Do not open)
51	C4M	O	1/2 division output of the crystal oscillator. $f = 4.2336\text{MHz}$ (Reserved)
52	VSS	—	Connected to GND. (0V)
53	XTAI	I	Crystal oscillator input. $f = 8.4672\text{MHz}$
54	XTAO	O	Crystal oscillator output. $f = 8.4672\text{MHz}$
55	MD1	I	Mode select input 1 used at "H" } $\left\{ \begin{array}{l} \text{Used in the mode with} \\ \text{the clock frequency } 8.4672\text{MHz,} \\ \text{the digital output OFF,} \\ \text{the digital filter ON.} \\ \text{(Connected to GND.)} \end{array} \right\}$
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. 44.1kHz with the filter OFF. (Reserved)
61	APTL	O	Aperture correction control output. 44.1kHz with the filter OFF. (Reserved)
62	DA01	O	DA01(LSB of parallel audio data) output with PSSL = "H". C1F1 output with PSSL = "L". (Reserved)
63	DA02	O	DA02 output with PSSL = "H". C1F2 output with PSSL = "L". (Reserved)
64	DA03	O	DA03 output with PSSL = "H". C2F1 output with PSSL = "L". (Reserved)
65	DA04	O	DA04 output with PSSL = "H". C2F2 output with PSSL = "L". (Reserved)
66	DA05	O	DA05 output with PSSL = "H". C2FL output with PSSL = "L". (Reserved)
67	DA06	O	DA06 output with PSSL = "H". C2P0 output with PSSL = "L". (Reserved)
68	DA07	O	DA07 output with PSSL = "H". RFCK output with PSSL = "L". (Reserved)
69	DA08	O	DA08 output with PSSL = "H". WFCK output with PSSL = "L". (Reserved)
70	DA09	O	DA09 output with PSSL = "H". $\overline{\text{PLCK}}$ output with PSSL = "L". (Note 1) (Reserved)
71	DA10	O	DA10 output with PSSL = "H". VGFS output with PSSL = "L". (Reserved)
72	DA11	O	DA11 output with PSSL = "H". GTOP output with PSSL = "L". (Reserved)
73	VDD	—	Power supply (+5V)
74	DA12	O	DA12 output with PSSL = "H". RA0V output with PSSL = "L". (Reserved)
75	DA13	O	DA13 output with PSSL = "H". C4LR output with PSSL = "L". (Reserved)
76	DA14	O	DA14 output with PSSL = "H". C210 output with PSSL = "L".
77	DA15	O	DA15 output with PSSL = "H". C210 output with PSSL = "L". (Note 2) (Reserved)
78	DA16	O	DA16(MSB of parallel audio data) output with PSSL = "H". DATA output with PSSL = "L". (Note 3)
79	WDCK	O	Strobe signal output. 88.2kHz with the filter OFF. (Reserved)
80	LRCK	O	Strobe signal output. 44.1kHz with the filter OFF.

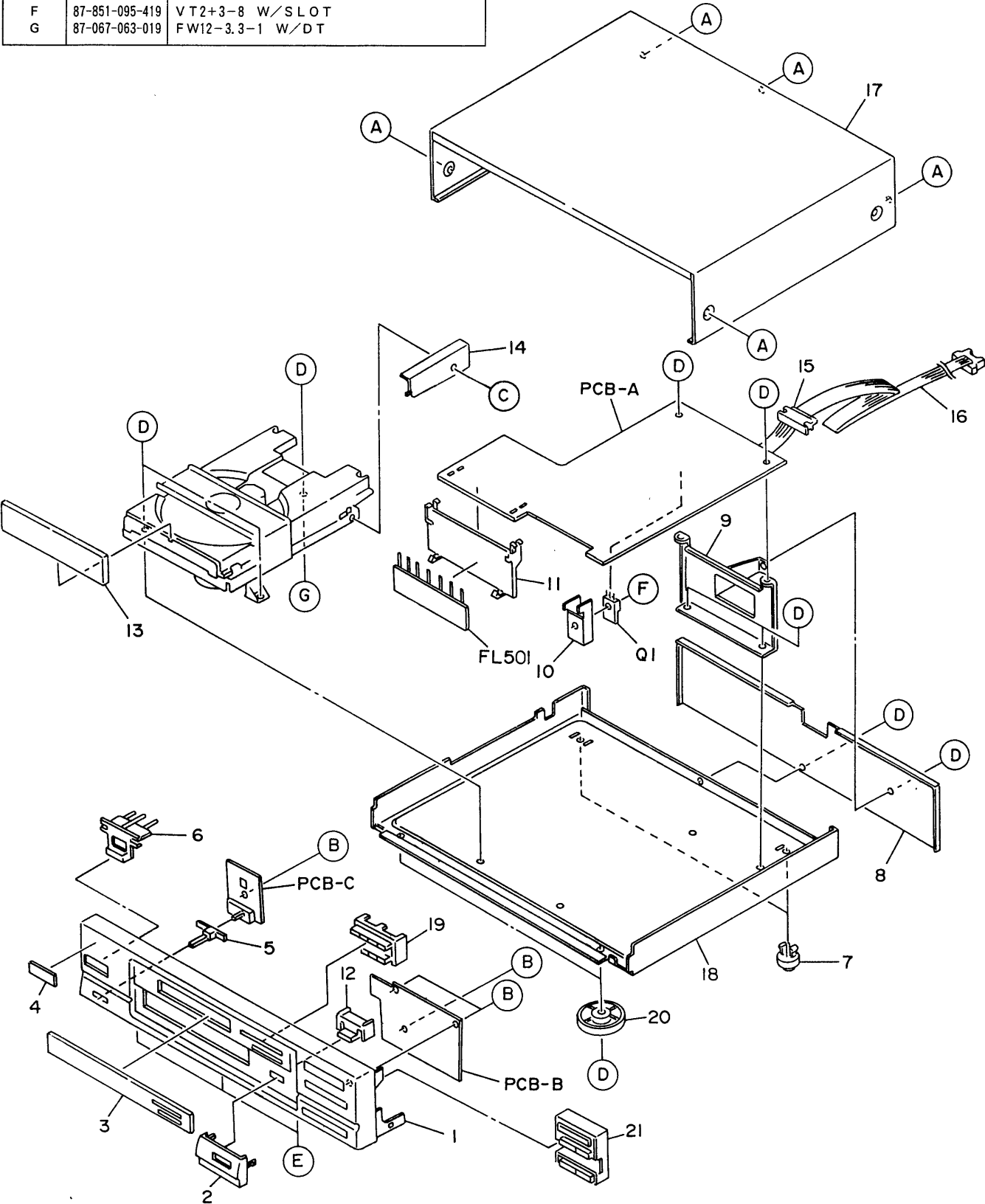
Note 1) $\overline{\text{PLCK}}$: VCO/2 output. When locked to the EFM signal, $f = 4.3218\text{MHz}$

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

Note 3) DATA: Audio signal serial data output

EXPLODED VIEW - 1

REF. NO.	PART NO.	DESCRIPTION
A	87-743-095-419	SCREW UT2+3-8 W/SLOT (B)
B	87-067-680-019	BVIT3B+3-10
C	87-067-686-019	BVIT3+2.6-8
D	87-067-688-019	BVTT+3-6
E	87-067-716-019	BVTT+3-6 (B)
F	87-851-095-419	VT2+3-8 W/SLOT
G	87-067-063-019	FW12-3.3-1 W/DT

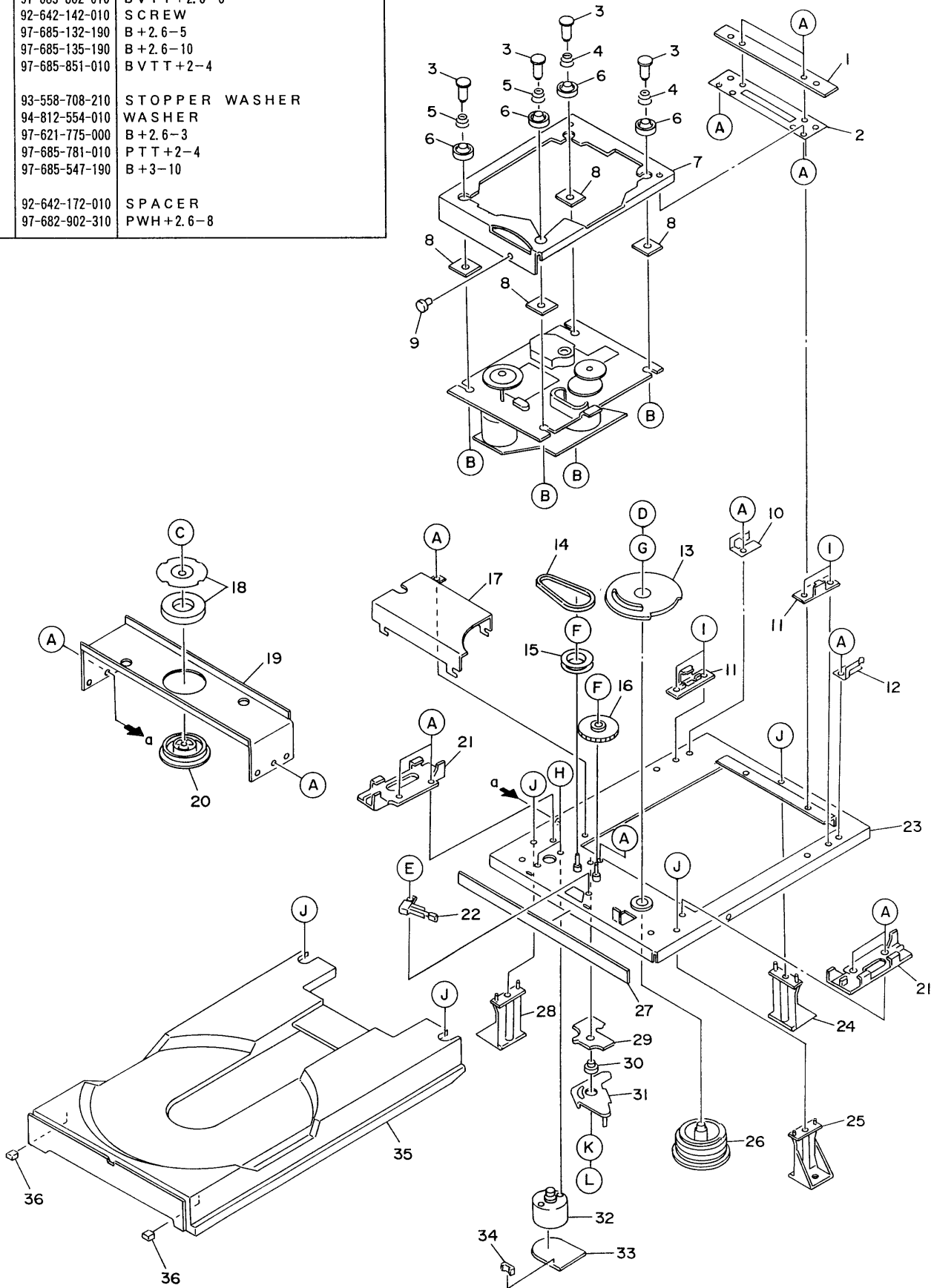


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q' TY
	1-1	★80-MD2-001-019	CABINET, FRONT	※	1
	1-2	★80-MD2-003-019	PANEL, OPEN	※	1
	1-3	★80-MD2-006-019	WINDOW, CD	※	1
	1-4	★84-764-009-119	BADGE, AIWA		1
	1-5	★81-715-029-019	KNOB, SLIDE		1
	1-6	★89-MK1-021-019	KEY, POWER		1
	1-7	★87-085-214-019	FOOT, H16		2
	1-8	★80-MD2-007-019	PANEL, REAR (Y)	※	1
	1-8	★80-MD2-010-019	PANEL, REAR (YE, YK)	※	1
	1-8	★80-MD2-009-019	PANEL, REAR (YJ)	※	1
	1-9	★89-VX5-204-019	HOLDER, CENTER (Y)		1
	1-9	★89-MD1-204-118	HOLDER, CENTER (YE, YK)		1
	1-10	---	HEAT SINK		1
	1-11	★80-MD2-202-019	GUIDE, FL	※	1
	1-12	★80-MD2-005-019	KEY, OPEN	※	1
	1-13	★80-MD2-002-019	PANEL, TRAY	※	1
	1-14	★89-VX5-205-019	HOLDER, MECHANISM (Y)		1
	1-14	★89-MD1-205-018	HOLDER, MECHANISM (YE, YK)		1
	1-15	★89-VT5-202-010	BUSHING, CORD		1
	1-16	---	CABLE, FLAT 11P FG		1
	1-17	★89-VX5-003-019	CABINET, STEEL (Y)		1
	1-17	★89-MD1-019-018	CABINET, STEEL (YE, YK)		1
	1-18	---	CHASSIS, MAIN		1
	1-19	★80-MD2-008-019	KEY, DISPLAY	※	1
	1-20	★87-085-215-019	FOOT, H12 DIA 5.8		2
	1-21	★80-MD2-004-019	KEY, PLAY	※	1

EXPLODED VIEW - 2

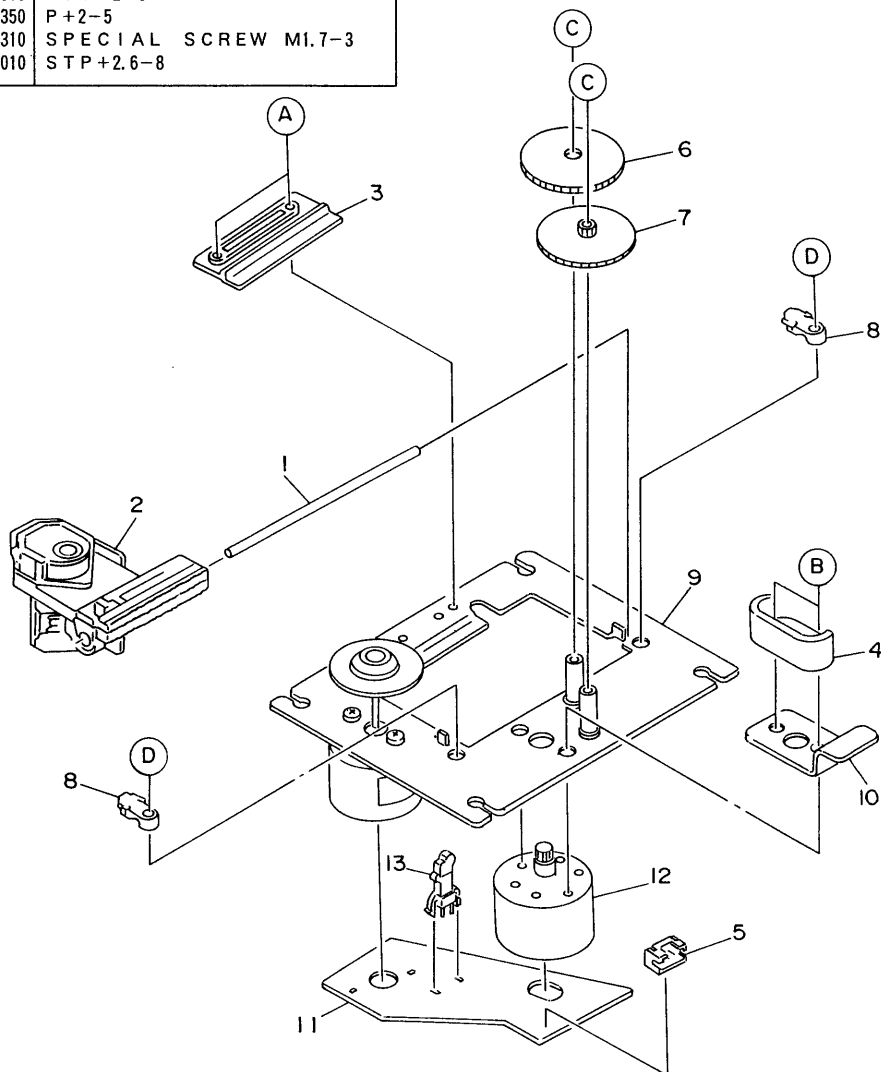
REF. NO.	PART NO.	DESCRIPTION
A	97-685-862-010	BVTT+2.6-6
B	92-642-142-010	SCREW
C	97-685-132-190	B+2.6-5
D	97-685-135-190	B+2.6-10
E	97-685-851-010	BVTT+2-4
F	93-558-708-210	STOPPER WASHER
G	94-812-554-010	WASHER
H	97-621-775-000	B+2.6-3
I	97-685-781-010	PTT+2-4
J	97-685-547-190	B+3-10
K	92-642-172-010	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, ROADING		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 5P		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	P T T+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	98-848-046-510	PICK UP (KSS-150AHRP)		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-264-134-810	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.