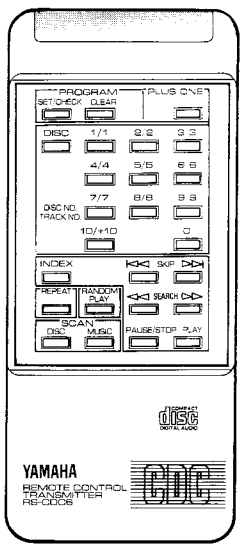
AUTOMATIC CD CHANGER

CDC-610/U/CDC-35

SERVICE MANUAL



IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherant to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

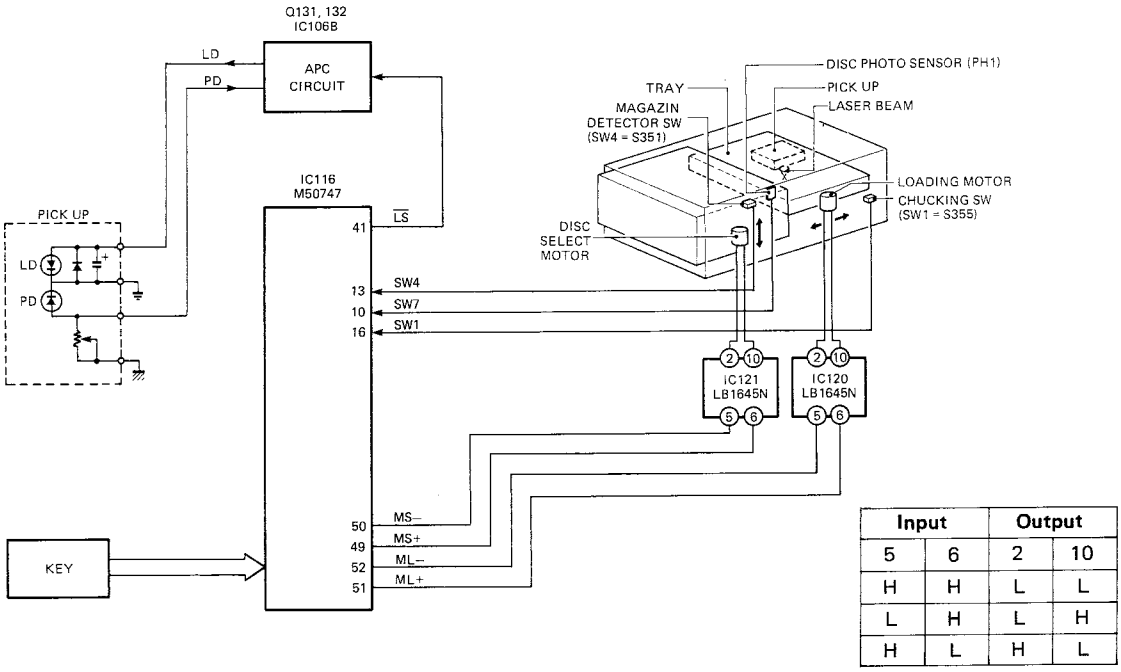
IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

■ CONTENTS

100201

YAMAHA
YAMAHA CORPORATION
P.O.Box 1, Hamamatsu, Japan
3.7K-854 Printed in Japan '88.9.

■ LASER BEAM SAFETY PRECAUTIONS



Input		Output	
5	6	2	10
H	H	L	L
L	H	L	H
H	L	H	L

- **Conditions for laser beam output from the pick up**
  1. A magazine must be installed.
  2. The operation button must have been pressed, the tray must have been put out from the magazine, and chucking must have been completed.

  Both of the above conditions must be fulfilled.

Operation Explanation

The operation sequence from magazine installation to laser beam output is explained below.

(1) When a magazine is installed with inserted power plug and the power switch, set to ON, S351, becomes ON, SW4 = "L" is obtained, and IC116 detects that a magazine has been installed.

(2) When an operation button (PLAY/PAUSE, DISC SCAN, MUSIC SCAN, RANDOM PLAY) is pressed, this is detected by IC116, MS– = "L", MS+ = "H" is obtained, and ② = "L", ⑩ = "H" is reached for IC121. Then the disc selection motor runs and the mechanism assembly rises.

(3) Passage of the gear slot is detected by PH1 with SW7 = "L" during rise of the mechanism assembly, and as the position of the first disc is reached when this has occurred twice, MS– = MS+ = "H" is obtained, ② = ⑩ = "L" is reached for IC121, and the disc selection motor and the mechanism assembly stop.
(If the disc selection key is pressed before step (2), the mechanism assembly moves to that position, and in the case of a single disc magazine, the mechanism assembly moves to the position of disc No. 8 of a ten disc magazine.)

(4) Next, ML+ = "H" and ML– = "L" is obtained for IC116. Then ② = "L" and ⑩ = "H" is put out by IC120, the loading motor runs, and the tray is pulled out from the magazine.

(5) When the tray has been pulled out from a magazine completely and chucking has been completed, becomes ON. IC116 becomes SW1 = "L", and when this is detected, ML+ = ML– = "H" is reached, ② = ⑩ = "L" is reached for IC120 and the loading motor and the loading mechanism stop.

(6) Next, $\overline{LS}$ = "L" is reached by IC116. Then the APC circuit operates, power is supplied to LD from Q132, and a laser beam is emitted.

Protection Operation

(1) After completion of play and before the tray is stored in the magazine, $\overline{LS}$ = "H" is reached by IC116 and the LD laser output is stopped.

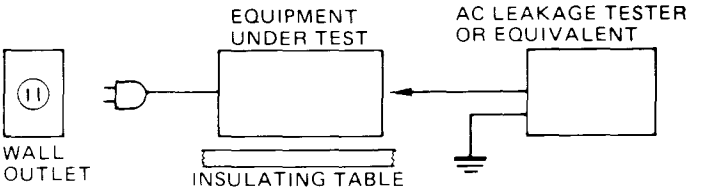
(2) After item (6) of the above operation explanation, IC116 reaches $\overline{LS}$ = "H" after several seconds if it is detected that there is no disc on the tray.

■ TO SERVICE PERSONNEL

1. Critical Components Information.
   Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.

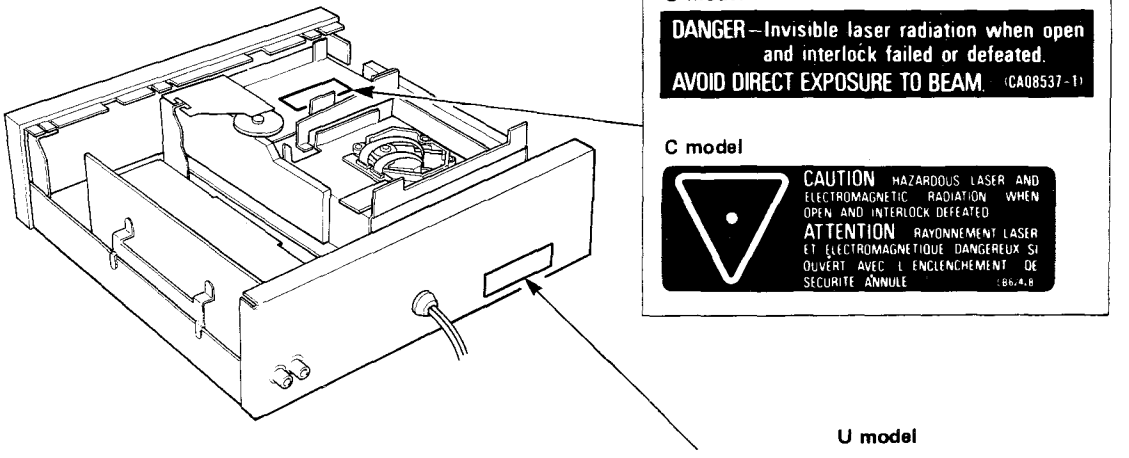
2. Leakage Current Measurement (For 120V Model Only).
   When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15μF
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.
- **POLARIZATION (U, C models)**
  This CD player product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature.



CAUTION – USE OF CONTROLS, ADJUSTMENTS, OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN, MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

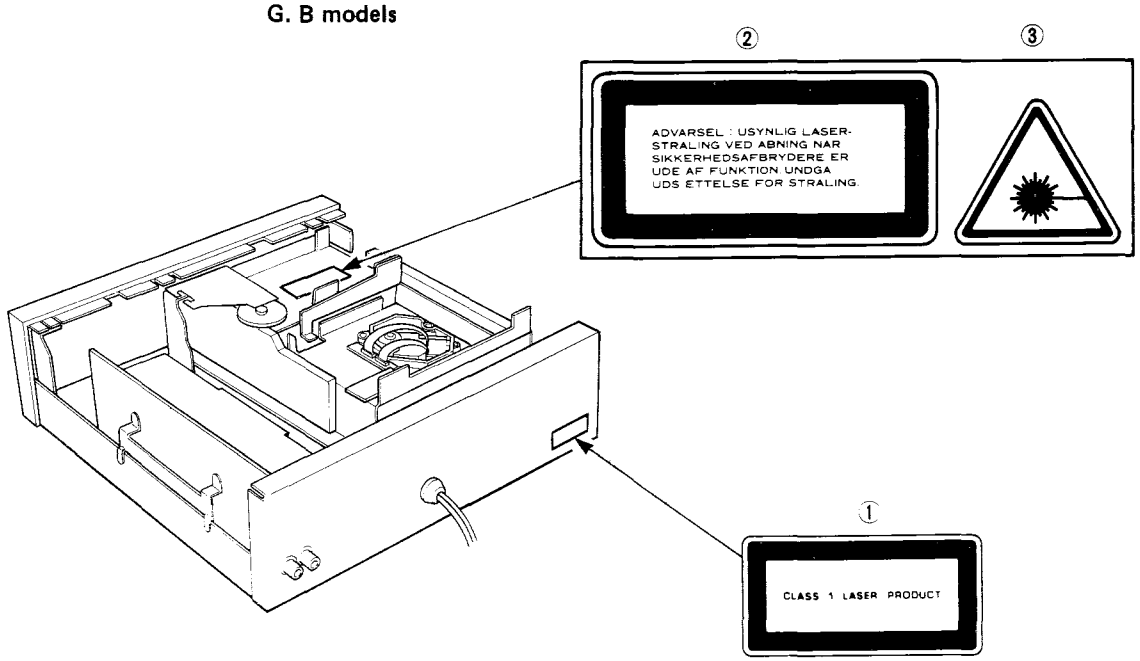


U model

THIS PRODUCT COMPLIES WITH DHHS RULES 21 CFR SUBCHAPTER J APPLICABLE AT DATE OF MANUFACTURE.

MANUFACTURED BY
YAMAHA CORPORATION
10-1 NAKAZAWA-CHO.
HAMAMATSU-SHI.
SHIZUOKA-KEN. JAPAN

G. B models



English

① THIS LABEL IS ATTACHED AT THE PLACE ILLUSTRATED TO INFORM THAT THE APPARATUS CONTAINS A LASER COMPONENT.

② THIS LABEL IS ATTACHED IN THE POSITION SHOWN IN THE ILLUSTRATION TO WARN THAT ANY FURTHER PROCEDURE WILL BRING THE USER INTO EXPOSURE WITH THE LASER BEAM.

③ THE WARNING LABEL INFORMING OF RADIATION IS PLACED INSIDE THE UNIT AS SHOWN IN THE ILLUSTRATION, TO WARN AGAINST FURTHER MEASURES ON THE UNIT. THE EQUIPMENT CONTAINS A LASER COMPONENT RADIATING LASER RAYS EXCEEDING THE LIMIT OF LASER PRODUCTS OF CLASS 1.

CAUTION–USE OF CONTROLS, ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN, MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Swedish

①PÅSKRIFTEN SITTER PÅ APPARATEM SOM VISAS SOM EN UPPMANING OM ATT APPARATEN OMFATTAR EN INBYGGD LASERKOMPONENT.

②TEXTSKYLTEN FÖR LASERN ÄR PLACERAD PÅ APPARATEN SOM EN UPPMANING OM ATT APPARATEN INNEHÅLLER EN LASERKOMPONENT.

③VARNINGSSKYLTEN FÖR STRÅLNING HAR PLACERATS I APPARATEN, SOM BILDEN VISAR, SOM EN VARNING OM YTTERLIGARE INGREPP I APPARATEN. MATERIELEN INNEHÅLLER EN LASERKOMPONENT SOM AVGER LASER-STRÅLNING ÖVERSTIGANDE GRÄNSEN FÖR LASERKLASS 1.

VARNING–INGREPP I APPARATEN BÖR ENDAST FÖRETAS AV FACKMAN MED KUNSKAP OM ATT RISK FÖRELIGGER FÖR RADIOAKTIV ATRÅLNING.

Danish

①DETTE MÆRKAT ER ANBRAGT SOM VIST I ILLUSTRATIONEN FOR AT ADVARE BRUGEREN OM AT APPARATET INDEHOLDER EN LASERKOMPONENT.

②DETTE MÆRKAT OM LASEREN ER ANBRAGT PÅ APPARATET SOM EN OPLYSNING OM AT APPARATET INDEHOLDER ET LASERKOMPONENT.

③ADVARSELSKILTET OM STRÅLING ER PLACERET INDENI APPARATET, SOM VIST I ILLUSTRATIONEN, SOM EN ADVARSEL OM YDERLIGERE INDGREB I APPARATET. APPARATET INDEHOLDER ET LASERKOMPONENT SOM AVGIVER LASESTRÄLING DER OVERSTIGER GÆNSEVERDIEN FOR LASERKLASSE 1.

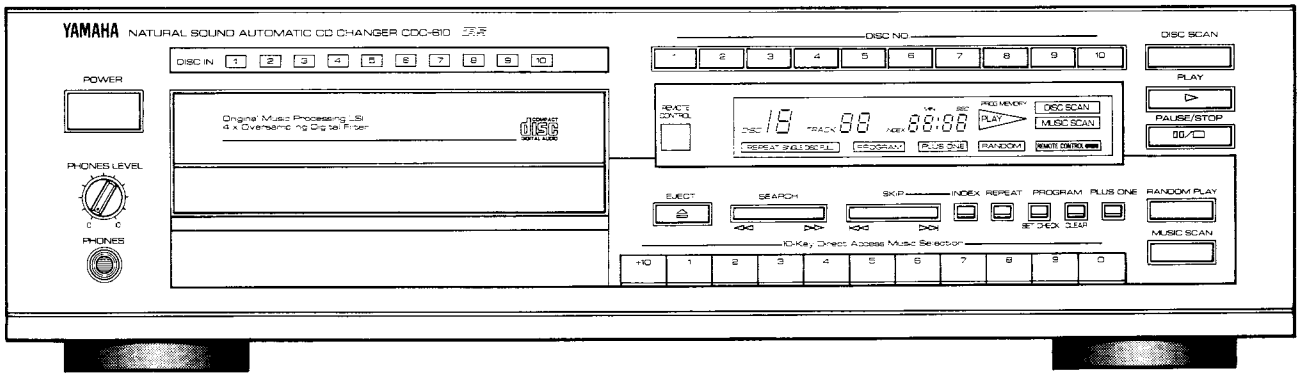
ADVARSEL! INDGREB BØR KUN FORETAGES AF EN FAGMAND DA DER ER RISIKO FOR RADIOAKTIV STRÅLING.

Finnish

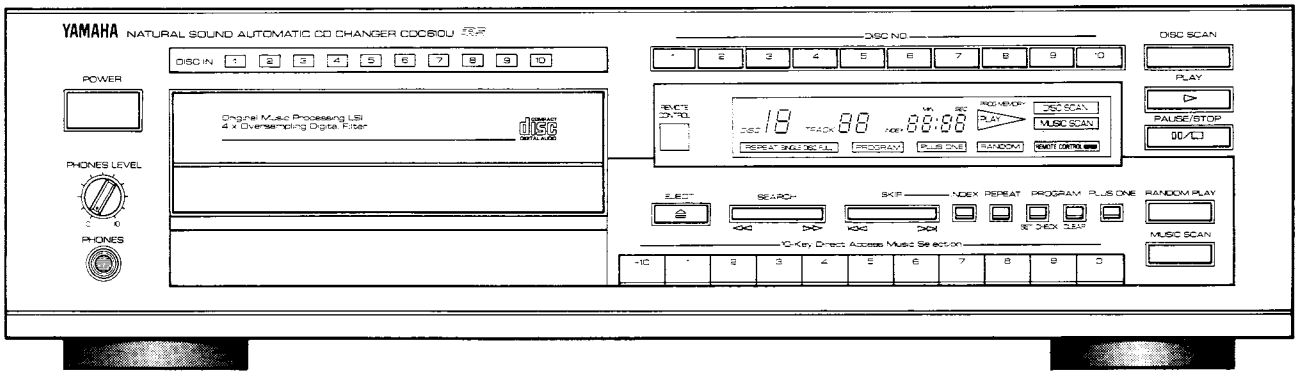
③"VAROITUS! LAITE SISÄLTÄÄ LASERDIODIN, JOKA LÄHETTÄÄ (NÄKYMÄTÖNTÄ) SILMILLE VAARALLISTA LASERSÄTEILYÄ:"

■ FRONT PANELS

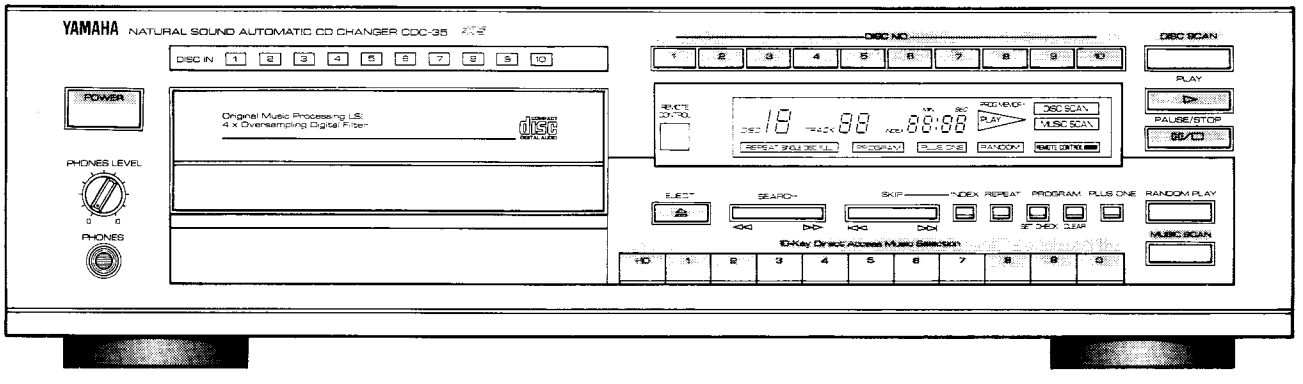
- CDC-610



- CDC-610U



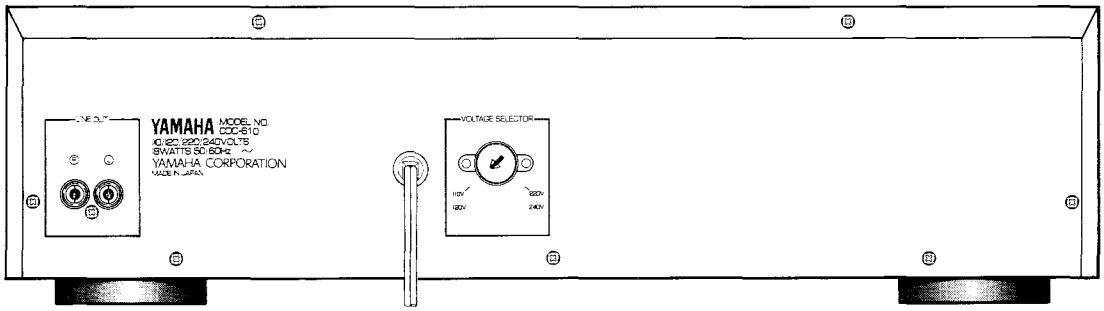
- CDC-35



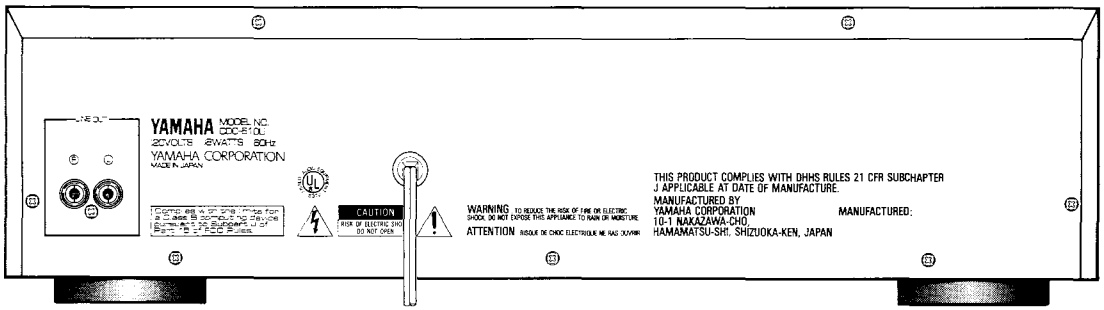
■ REAR PANELS

CDC-610/U

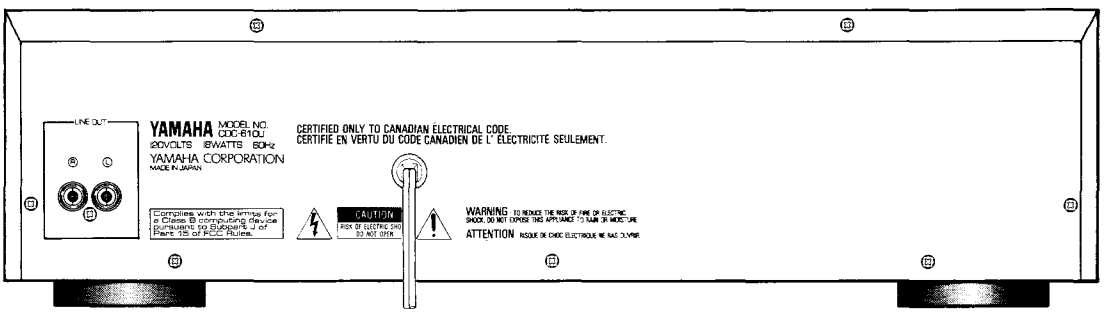
▼General model



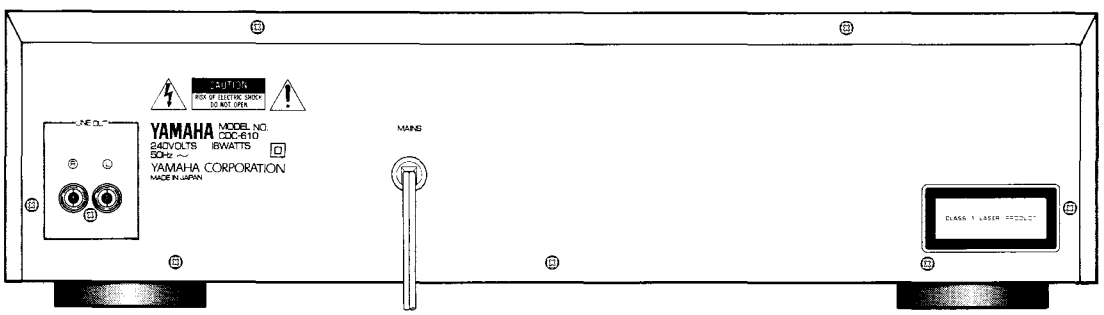
▼U.S.A. model



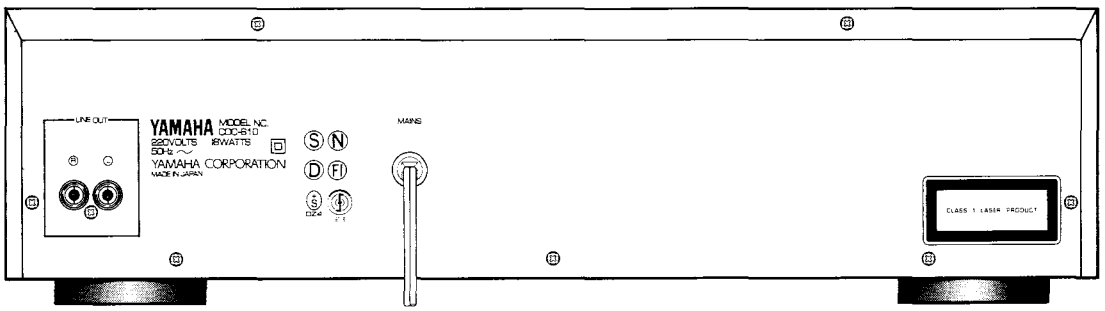
▼Canadian model



▼European model

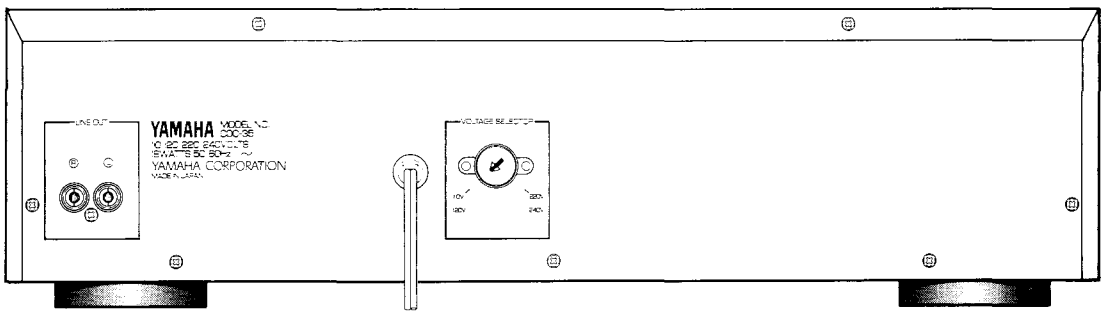


▼Australian & British models

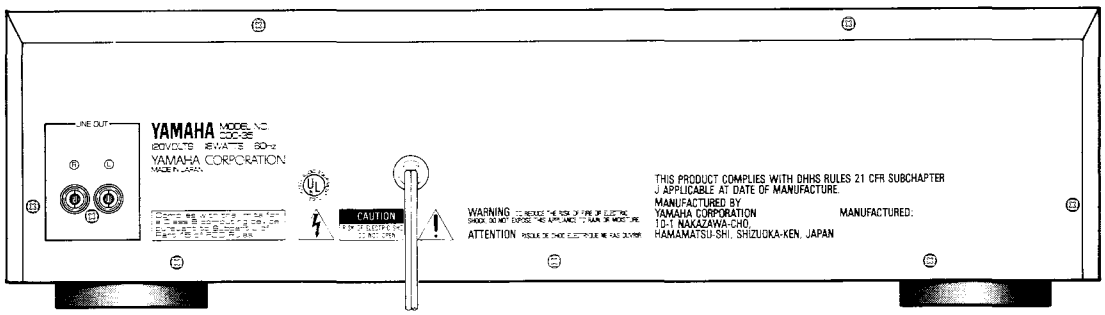


▼General model

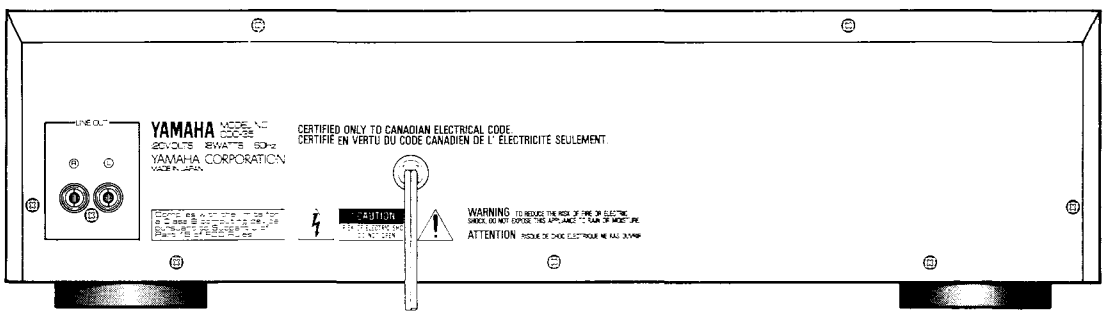
CDC-35



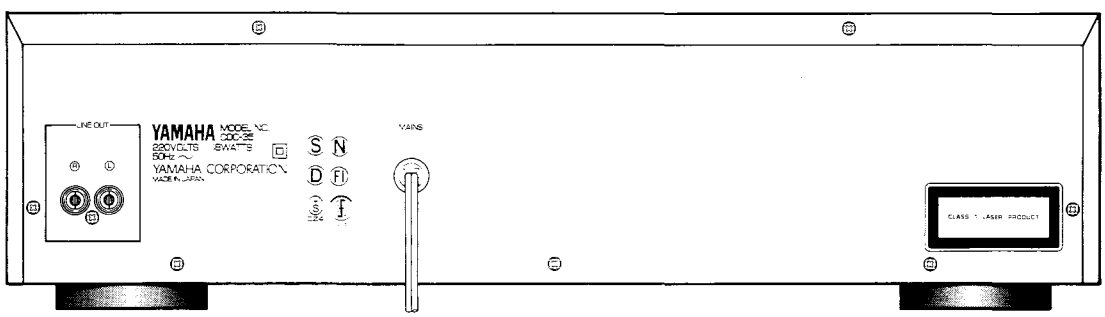
▼U.S.A. model



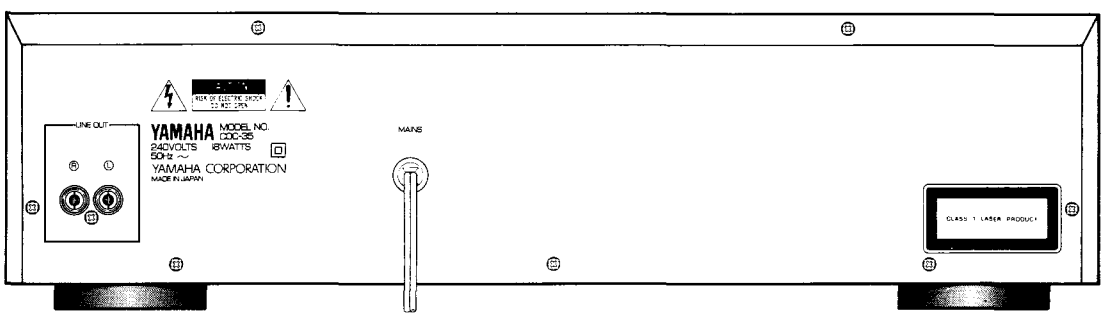
▼Canadian model



▼European model



▼Australian & British models



■ SPECIFICATIONS

■ AUDIO SECTION

Frequency Response	5Hz ~ 20kHz ± 0.5dB
De-Emphasis Equalization	± 0.5dB (EIAJ)
Harmonic Distortion + Noise	Less than 0.008%, 1kHz (EIAJ)
S/N Ratio	100dB (EIAJ)
Dynamic Range	More than 96dB (EIAJ)
Wow & Flutter	Unmeasurable
Channel Separation	More than 80dB, 1kHz (EIAJ)
Output Voltage	2V (EIAJ)
Output Impedance	2.2kΩ
Headphone Output	200mV/150Ω (–20dB)

■ INTERNAL SYSTEMS

Optical Pick-up	3-beam laser
Error Correction System	CIRC, dual error correction system
D/A Conversion	16-bit linear
Filter	4 x Digital filter and 3rd order active filter

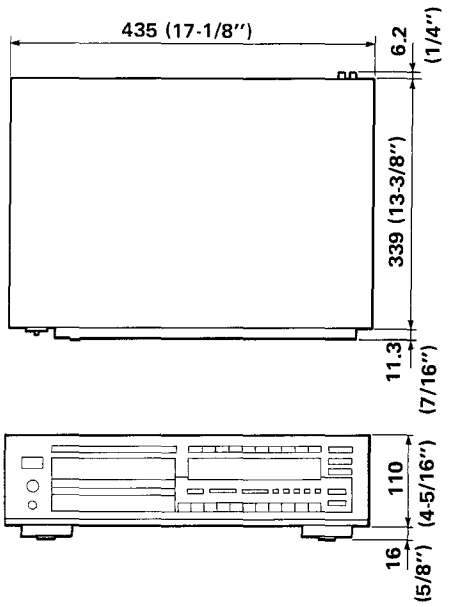
■ GENERAL

Power Requirements	
U, C models	120V AC, 60Hz
G, B models	220–240V AC, 50Hz
A model	240V AC, 50Hz
R model	110–120/220–240V AC, 50/60Hz
Power Consumption	18W
Dimensions (W x H x D)	435 x 126 x 356.5 (17-1/8" x 4-15/16" x 14-1/16")
Weight	7.1kg (15 lbs 10 oz.)
Accessories	Pin plug cord Remote control transmitter (RS-CDC6) Dry-cell: X2 (Size "AA", "R06") CD magazine

** Specification subject to change without notice.*

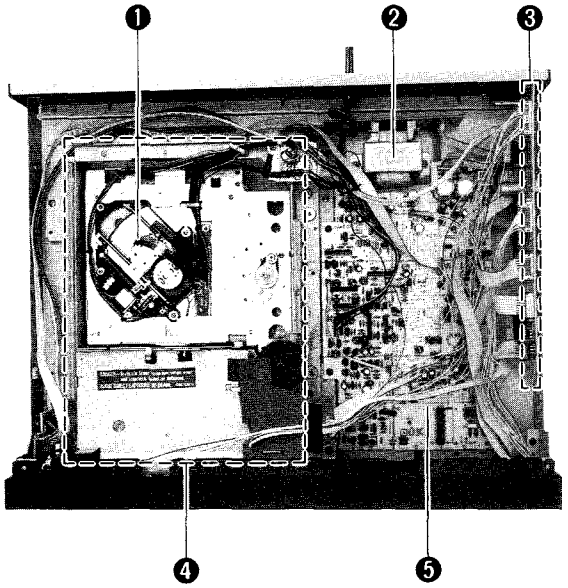
U ..... U. S. A. model
C ..... Canadian model
B ..... British model
A ..... Australian model
G ..... European model
R ..... General model

• DIMENSION



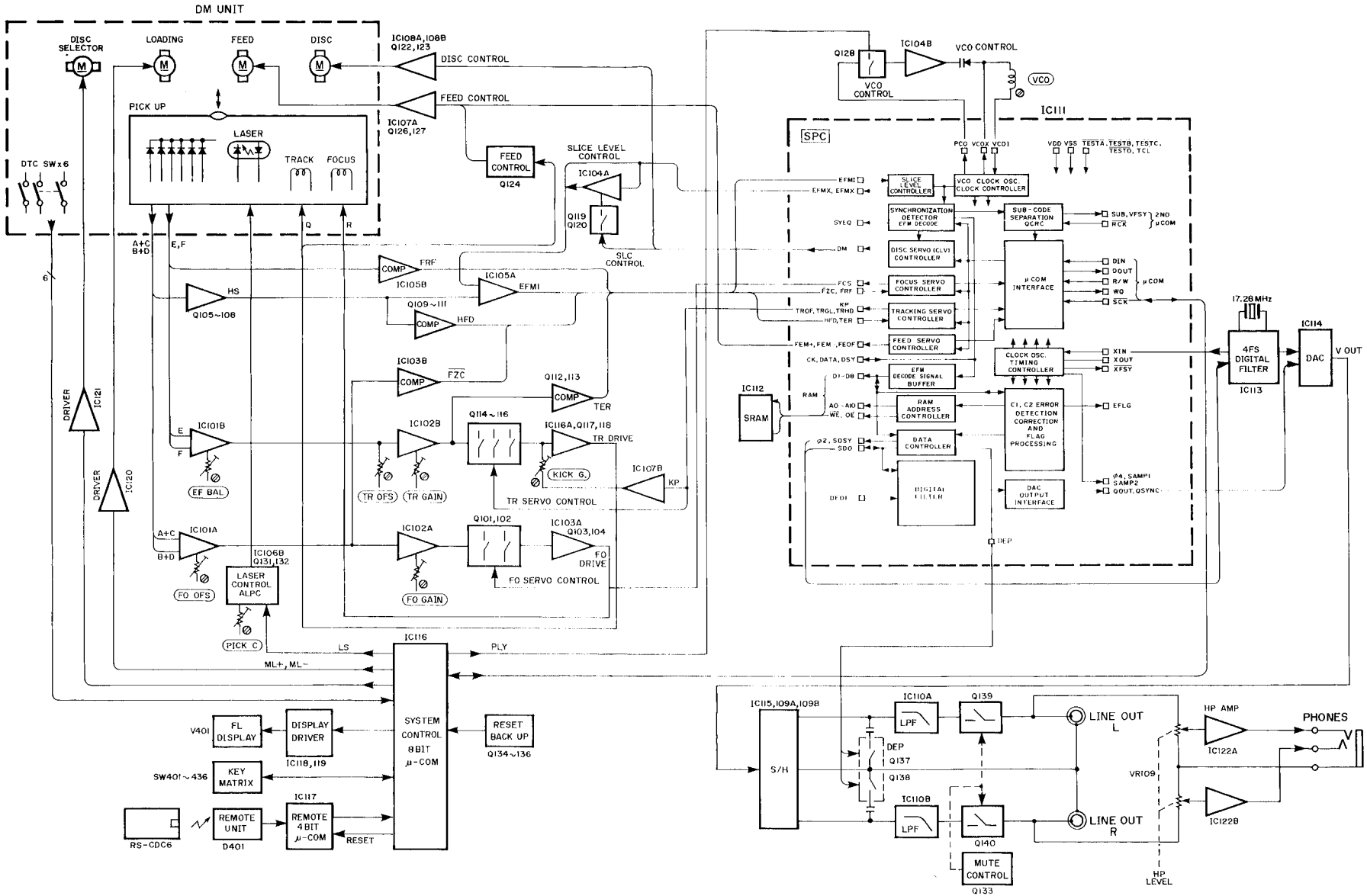
Unit: mm (Inch)

■ INTERNAL VIEW



❶ PICK UP ASS'Y
❷ POWER SUPPLY UNIT
❸ MAIN CIRCUIT BOARD (2): μ-COM section
❹ DISC MECHANISM UNIT
❺ MAIN CIRCUIT BOARD (1)

■ BLOCK DIAGRAM

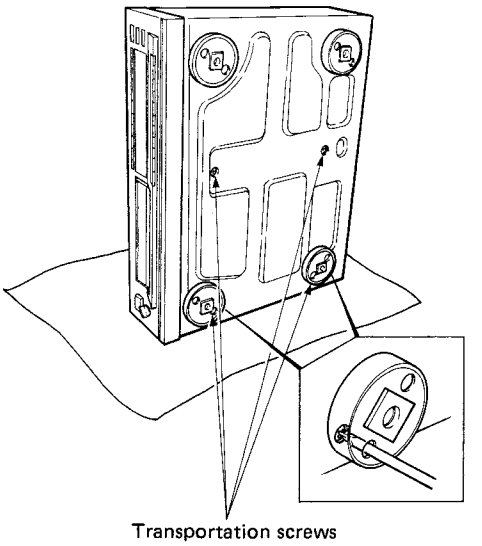


■ TRANSPORTATION SCREWS

In order to protect the internal laser pickup from the vibration and shocks which occur during transportation, it is held in place with transportation screws located on the bottom of the unit. Be sure to remove the 4 transportation screws before making any connection.

1. As shown in the figure, spread out a soft cloth or other protective material, and gently stand the unit on its side, taking care not scratch the finish.
2. Remove the 4 transportation screws with a phillips (+) screwdriver.

- To remove the screws, be sure to stand the unit on its side. Do not place it with the front facing up (rear panel terminals down).
- After removing the screws, retain them in a safe place.
  When the unit is to be transported again, be sure to place the 4 screws to their original position.



■ DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

1. **Removal of Top Cover**
   Remove 6 screws (①) in Fig. 1.

2. **Removal of Front Panel**
   Remove 6 screws (②) in Fig. 1.

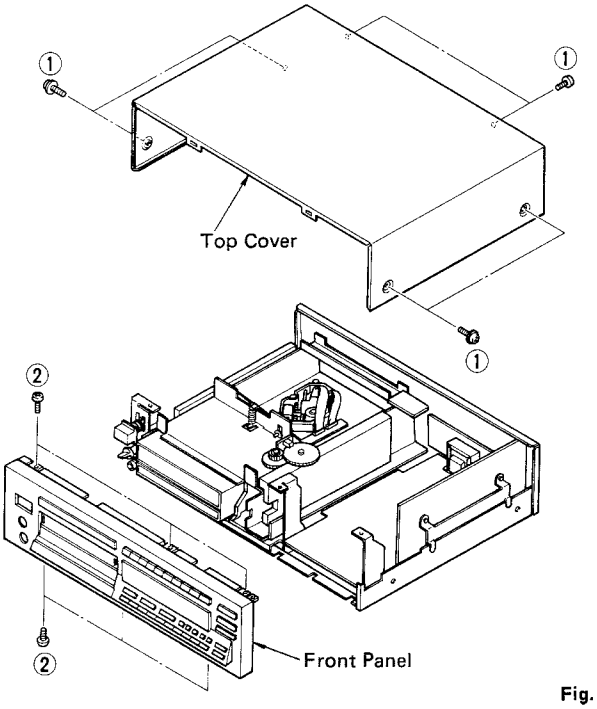


Fig. 1

3. **Removal of Disc Mechanism Unit**
   Remove 4 screws (③) in Fig. 2.

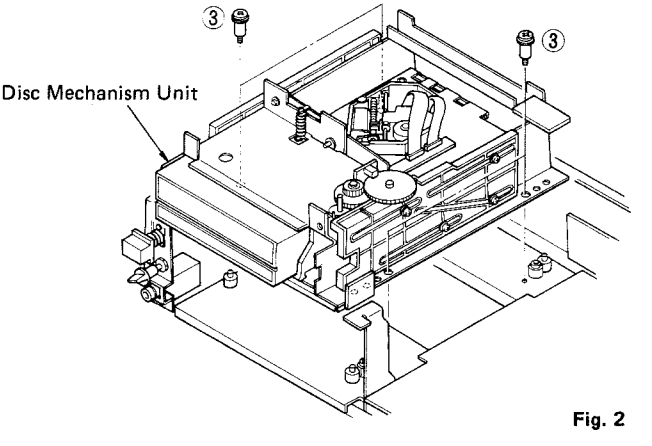


Fig. 2

The compact disc is a very delicate mechanism.
It is very important that the spindle motor (which rotates the disc), the sled motor, the worm gear, etc all operate smoothly and without eccentricity.

4. Removal of Pick Up Ass'y

Remove 4 screws (④) in Fig. 3.

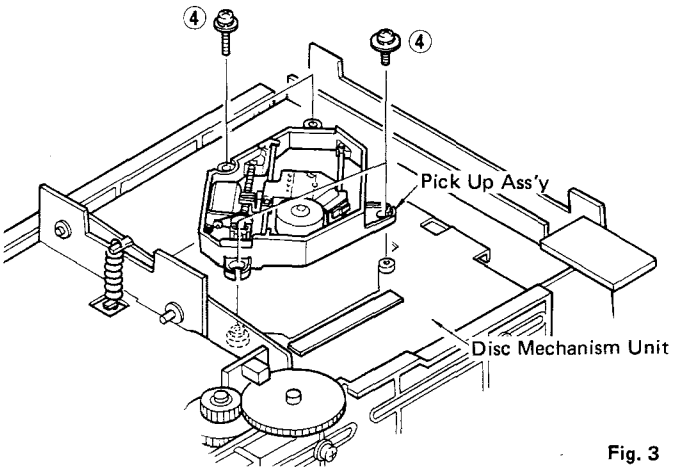


Fig. 3

5. Removal of Pick Up Head

Remove 4 screws (⑤) in Fig. 4.

6. Removal of Sled Motor and Belt

a. Remove 2 bealings (⑥) which hold worm gear in Fig. 4.
b. Remove screw (⑦) which hold sled motor bracket in Fig. 4.
c. Remove 2 screws (⑧) which hold sled motor in Fig. 4.
d. Remove the Sled Motor and Belt.

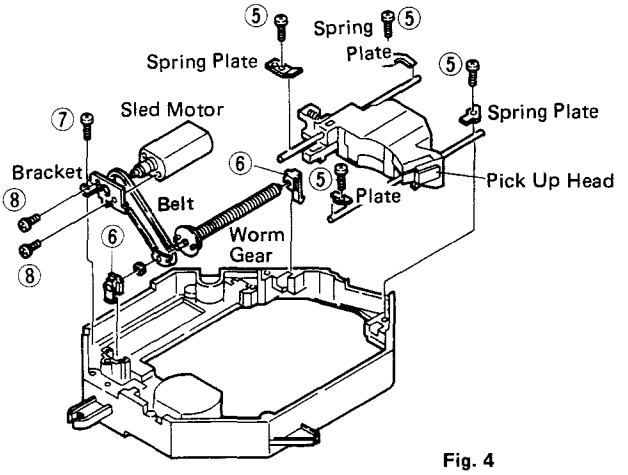


Fig. 4

7. Removal of Turntable and Spindle Motor

Pull off the turntable an remove 2 screws (⑨) in Fig. 5.

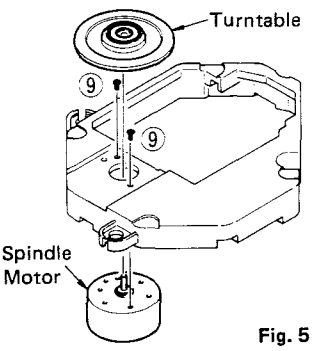


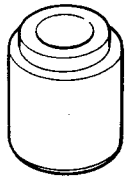
Fig. 5

- **Installing Spindle Motor and Turntable**

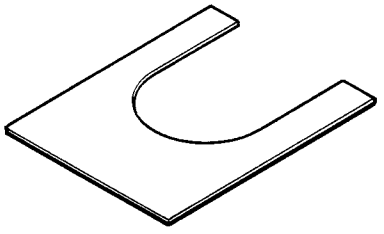
* The Following tools are necessary for their installation.

Tool Set (P/No. TX913200)

Boss (To position the spindle motor)



Spacer (To adjust the turntable height)



a. Put the boss into the hole in the chassis as shown in Fig. 6 and bring the spindle motor from underside of the chassis so that the spindle fits in the hole in the boss. After making sure that the spindle motor is positioned properly, tighten the screws.

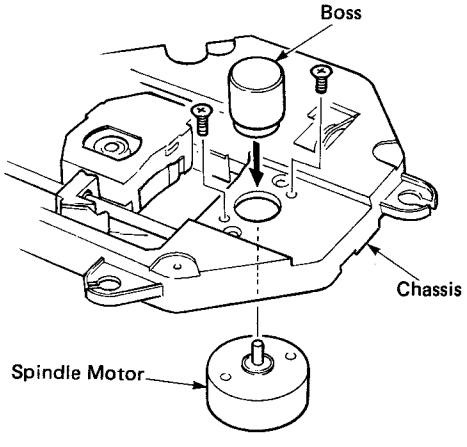


Fig. 6

b. With the spacer placed on the pickup chassis as shown in Fig. 7, fit the turntable to the motor spindle and push it down.

NOTE: Use care not to bend the spacer which is as thin as 0.6t. Also, be sure not to touch the pickup head when installing the spindle motor and turntable.

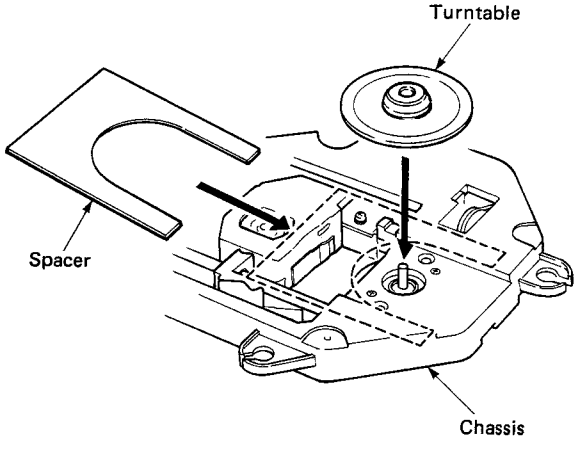
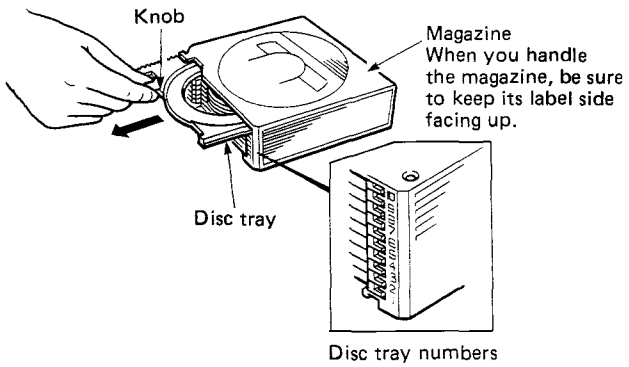


Fig. 7

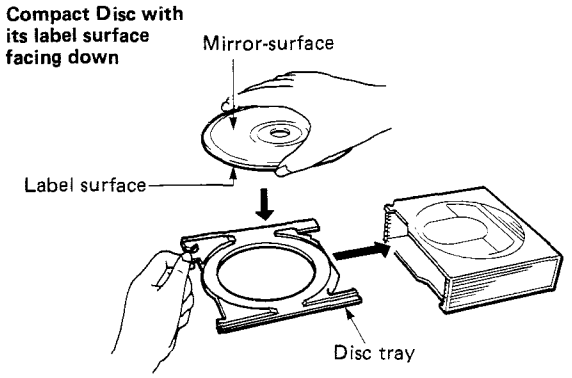
■ CD MAGAZINE

How to load discs into the magazine

1. The magazine disc trays are removable. Hold and pull on the right hand knobs to slide out the odd-numbered disc trays, and pull on the left hand knobs to slide out the even-numbered disc trays.



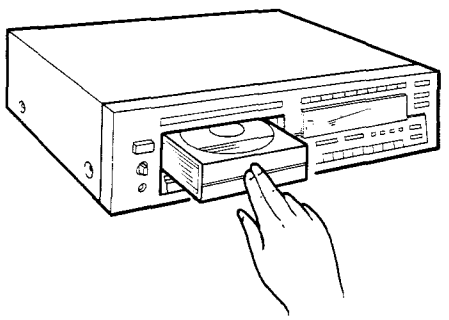
2. Draw the disc tray completely out of the magazine and place a Compact Disc on it with its label surface facing down.



3. Line the disc tray up with the grooves in the magazine, and holding it by the knob, push the disc tray all the way in, until the tray clicks.

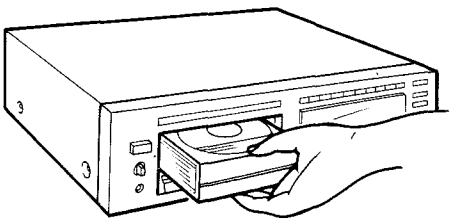
How to load the magazine

1. Insert the magazine loaded with discs into the magazine insertion slot, and then push on the center of the magazine until the magazine clicks into place.



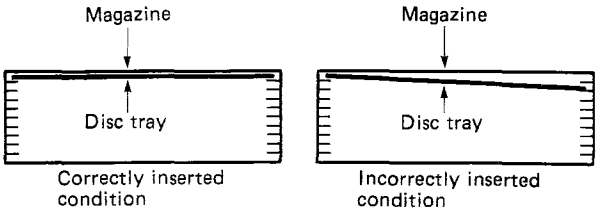
How to remove the magazine

1. Press the EJECT button when the power is turned on. The magazine is ejected and about 1/3 of the magazine will protrude from the player's front panel.
2. Remove the magazine with your hand.



Notes on the magazine

- Since the disc trays can be removed from the magazine, be sure to keep the magazine horizontal, so as not to drop the discs or the disc trays.
- When putting a disc tray into the magazine, insert it between the left and right internal grooves of the magazine, and then push it in all the way so that the disc tray is secured horizontally. If a disc tray is inserted on a slant, using the incorrect grooves, the disc tray cannot be pushed all the way in, and this could cause trouble. Make sure that the disc trays are correctly inserted into the magazine.



- Do not insert a disc into the magazine without first loading it onto a disc tray.
  Be sure that the discs are loaded on the disc trays and inserted into the magazine correctly.
- After playing, the discs can be stored loaded in the magazine. When storing, do not store the magazine in a place exposed to direct sunlight or subject to high temperature.
- Be careful not to drop the magazine or subject it to shock.
  Also do not apply intensive shock to the disc trays when they are removed from the magazine.
- Do not allow the magazine or disc tray to come into contact with benzine, thinner or any detergent solvent, for this may damage the surface finish.
- This unit is not designed for 8 cm sized Compact Discs.
  Do not load an 8 cm sized Compact Disc with its adapter.

■ ADJUSTMENTS

• Necessary items

Measuring instruments

Oscilloscope : x 2
(At least one shall have a bandwidth of 50 MHz or more)
Audio frequency oscillator (A.F. OSC) : x 1
AC voltmeter (ACVM) : x 2
(One dual channel or two single channel meters)
DC voltmeter (DCVM) : x 1
Frequency counter (FC) : x 1

Jigs

Test disc : x 1
(YEDS-18 P/N TX911730, YEDS-7 P/N TX911320 or Philips test sample disc)
Filter (See Fig. A) : x 1
Shorting cord : x 1

Tools

Screwdriver : x 1
(For-Pre-Set Potentiometer adjustment)
Core screwdriver : x 1

• Adjustment jig (with internal filter)

Connect the filter in Fig. A before measurement.

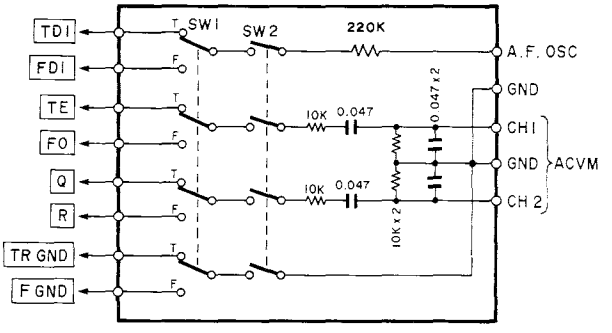


Fig. A

SW1 : FOCUS gain and TRACKING gain switching
SW2 : Filter ON/OFF switch

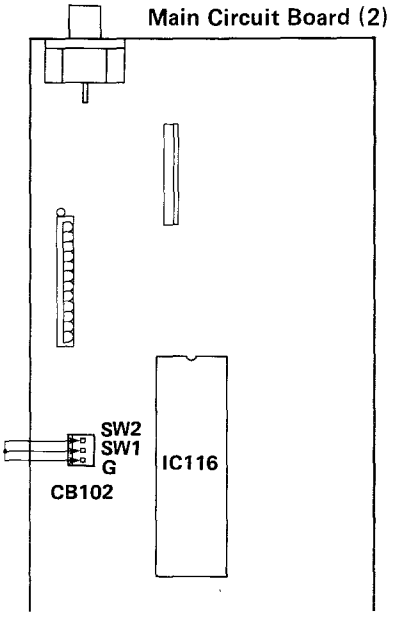
• Precautions or Special Notes

1. Measure the output level at the output terminal of the AF oscillator.
2. The unit should always be in a horizontal position while performing adjustments.

• Before Adjustments

Setting to TEST mode

Before adjustments, set to the TEST mode by turning ON the power switch while shorting circuit 3P connector (CB102).

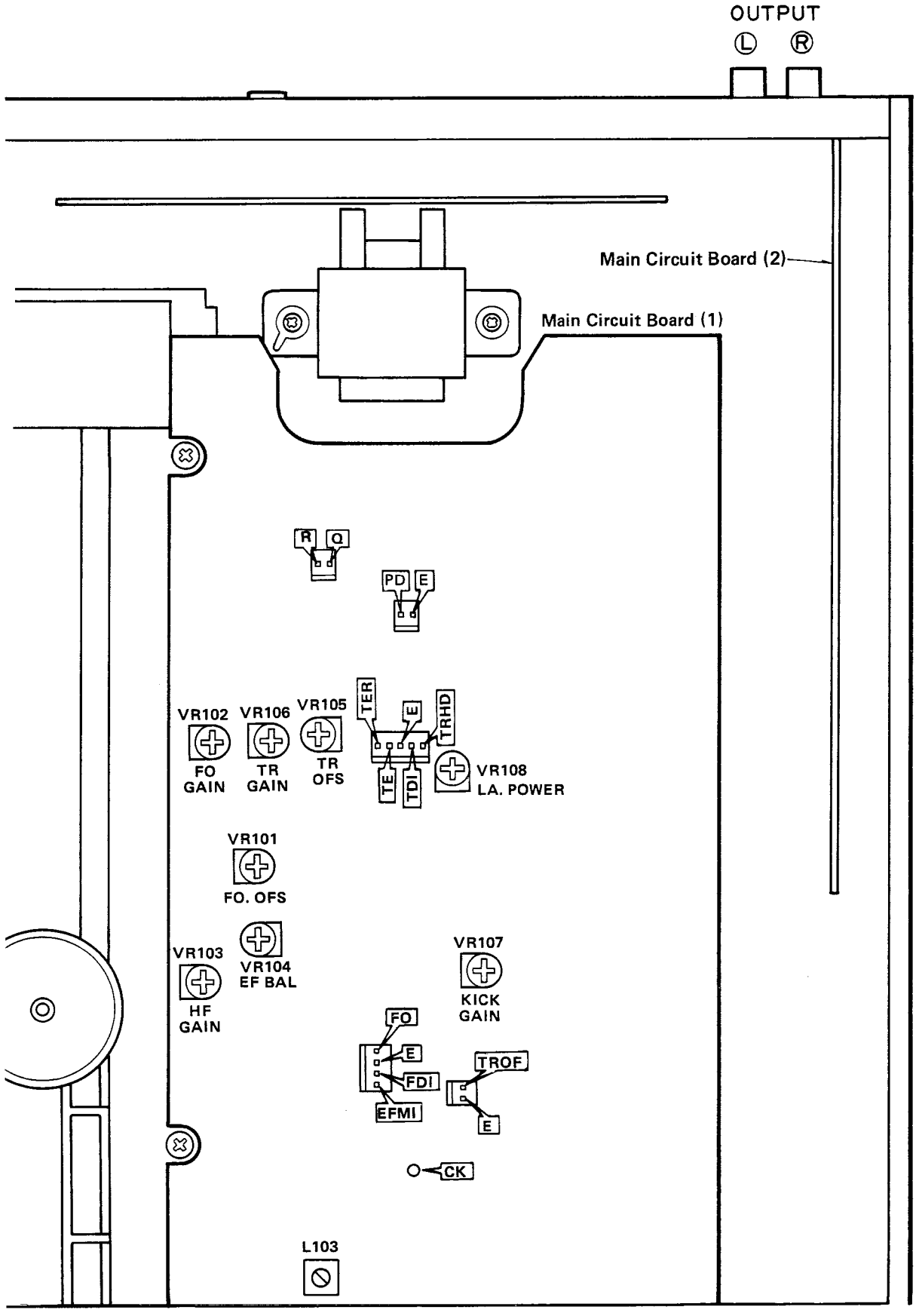


KEY	COMD
EJECT	FOCUS START
PLAY	PLAY
PAUSE/STOP	COMD STOP
–	FFB
◁◁	FB
▷▷	FF
+	FFF
REPEAT	PAUSE
+10	FEED RETURN
1 (TEN KEY)	FEED FORWARD

• Make adjustments in numerical order

Step 1. Adjustment of VCO
Step 2. Adjustment of Laser Power
Step 3. Adjustment of EF Balance
Step 4. Adjustment of Focus Offset
Step 5. Adjustment of HF Gain
Step 6. Adjustment of Focus Gain
Step 7. Adjustment of Tracking Gain
Step 8. Adjustment of Tracking Offset
Step 9. Adjustment of Kick Gain

- Test Points


OUTPUT
Ⓛ Ⓡ
Main Circuit Board (2)
Main Circuit Board (1)
R
Q
PD
E
VR102
FO
GAIN
VR106
TR
GAIN
VR105
TR
OFS
TER
E
TRHD
TE
TDI
VR108
LA. POWER
VR101
FO. OFS
VR103
HF
GAIN
VR104
EF BAL
VR107
KICK
GAIN
FO
E
FDI
EFMI
TROF
E
CK
L103

Adjustment of VCO (Step 1)

① Connect the shorting cord and measuring instruments, as shown in Fig. B.
② Do not load a disc.
③ Press POWER key. (POWER ON)
④ While observing the frequency counter indication (F_{VCO}), adjust L103 so that it satisfies the rating.

Rating: F_{VCO} = 4.3218 MHz ± 10 kHz

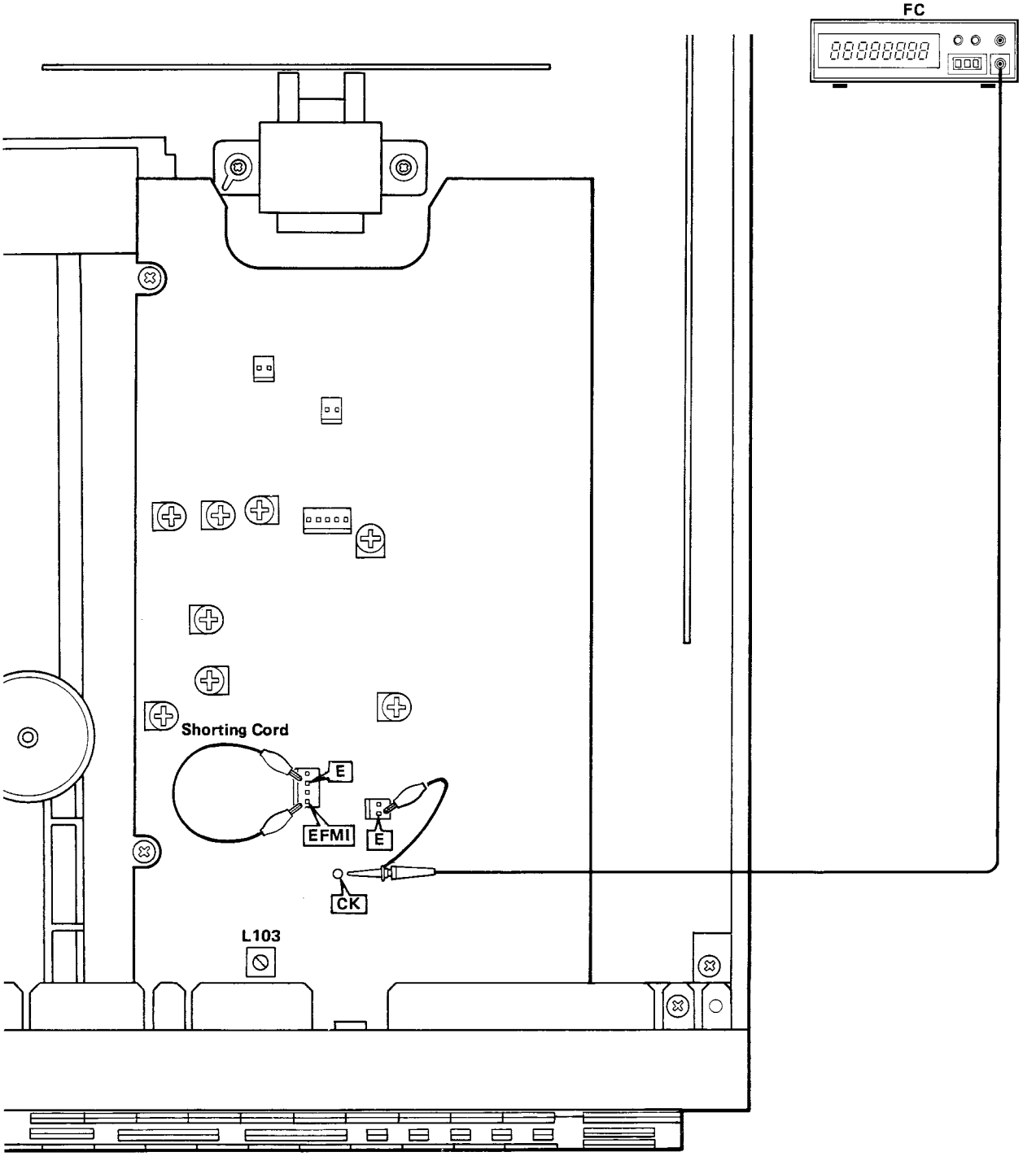


Fig. B

Adjustment of Laser Power (Step 2)

1 Connect a DC voltmeter to [PD] and [E] terminals.
2 Set to the TEST mode.
3 Press the EJECT key. (FOCUS START)
4 Adjust VR108 so that the specified rating is obtained.

Rating: E = 135mV DC ± 3mV DC

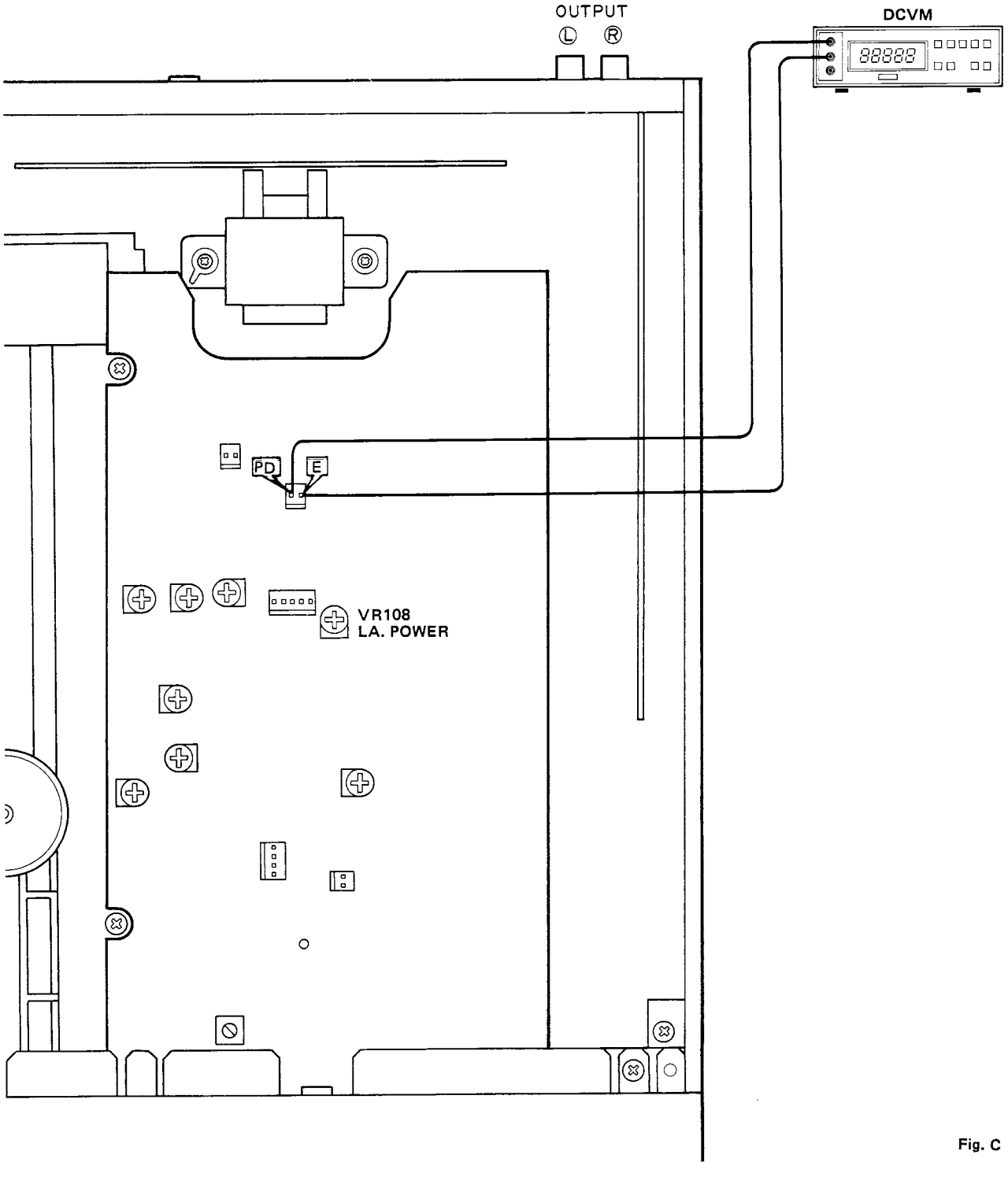


Fig. C

Adjustment of EF Balance (Step 3)

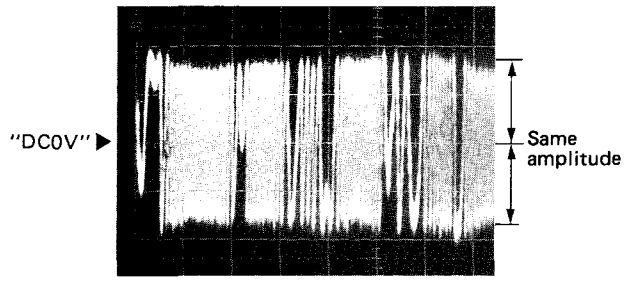
Oscilloscope (1) settings

- DC coupling
- 0.1 V/div range (Vertical)
  (10mV/div when 10 : 1 probe is used)
- 20 msec/div time (Horizontal)

① Connect oscilloscope (1) to TER terminal as shown in Fig. D.
② Load the test disc.
③ The POWER switch is turned OFF.
④ Set to the TEST mode.
⑤ Press the EJECT key.
⑥ Press the PLAY key.
⑦ Short between the TDI and Q terminals.
(TRACKING SERVO → OFF)
⑧ Observe the waveform on the oscilloscope (1).
⑨ Adjust VR104 (EF B) so that the amplitude of the TER signal becomes equal above and below the DC 0V position.
* Adjust at the inner circumference of the disc.

Good

Rating DC offset → Less than ± 10mV.



This shows DC 0V state.

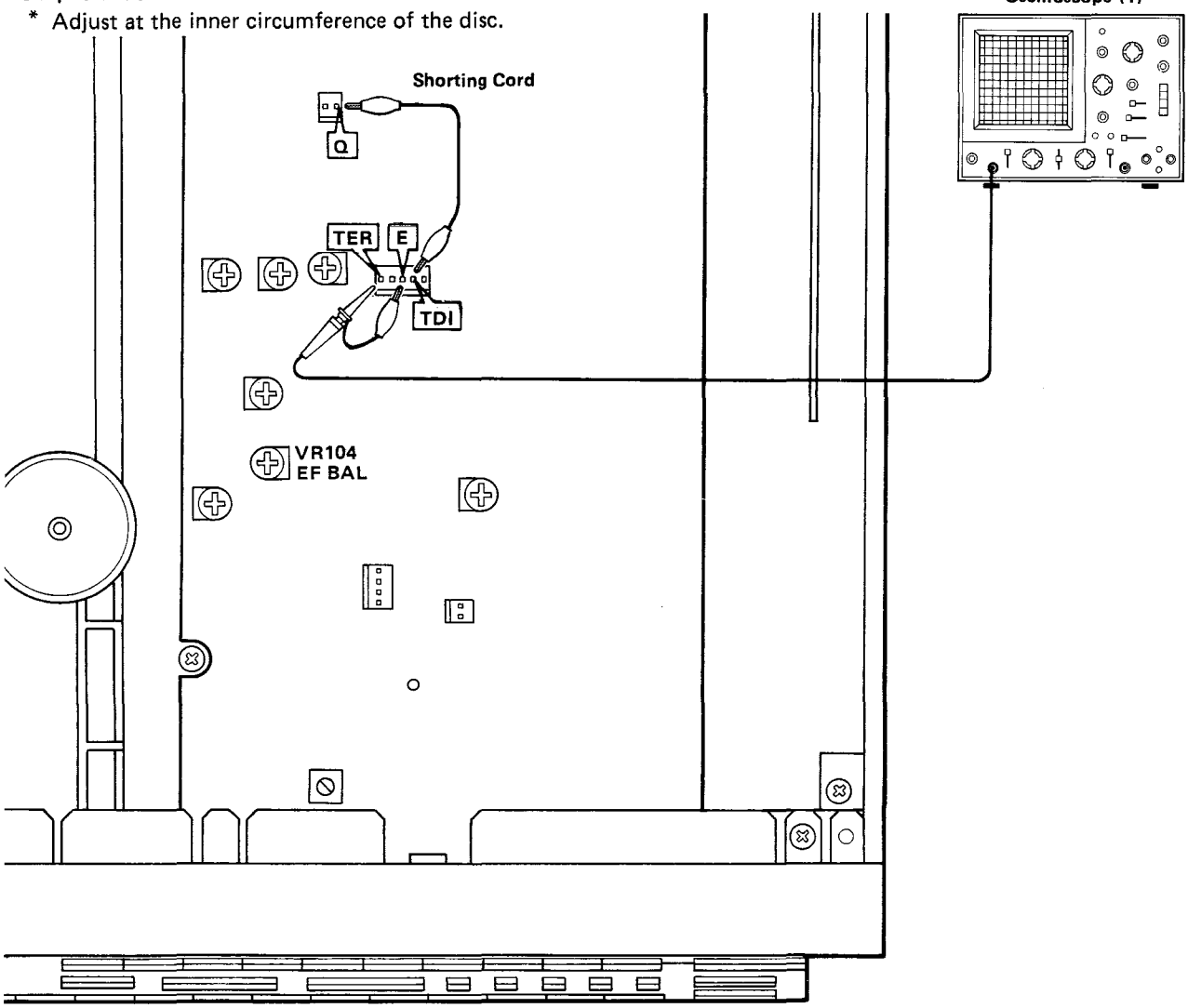


Fig. D

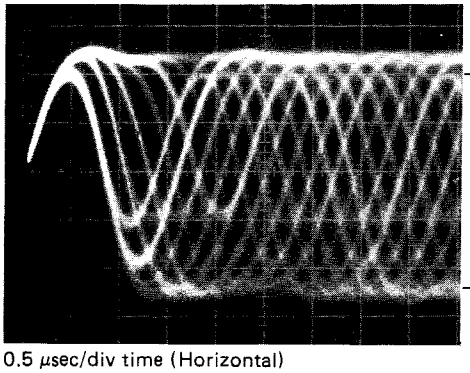
Adjustment of Focus Offset (Step 4)

Oscilloscope (2) Settings

- AC coupling
- 0.5 V/div range (Vertical)
  (50 mV/div when 10 : 1 probe is used)
- 0.2 ~ 0.5 μsec/div time (Horizontal)

① Connect the oscilloscope (2) to EFMI terminal.
② Load the test disc.
③ Press the PLAY key.
④ Adjust VR101 so that the EFMI signal (eye-pattern) becomes distinct and clear.
* Adjust at the center of the disc.

Eye pattern



0.5 μsec/div time (Horizontal)
0.5 V/div (Vertical)

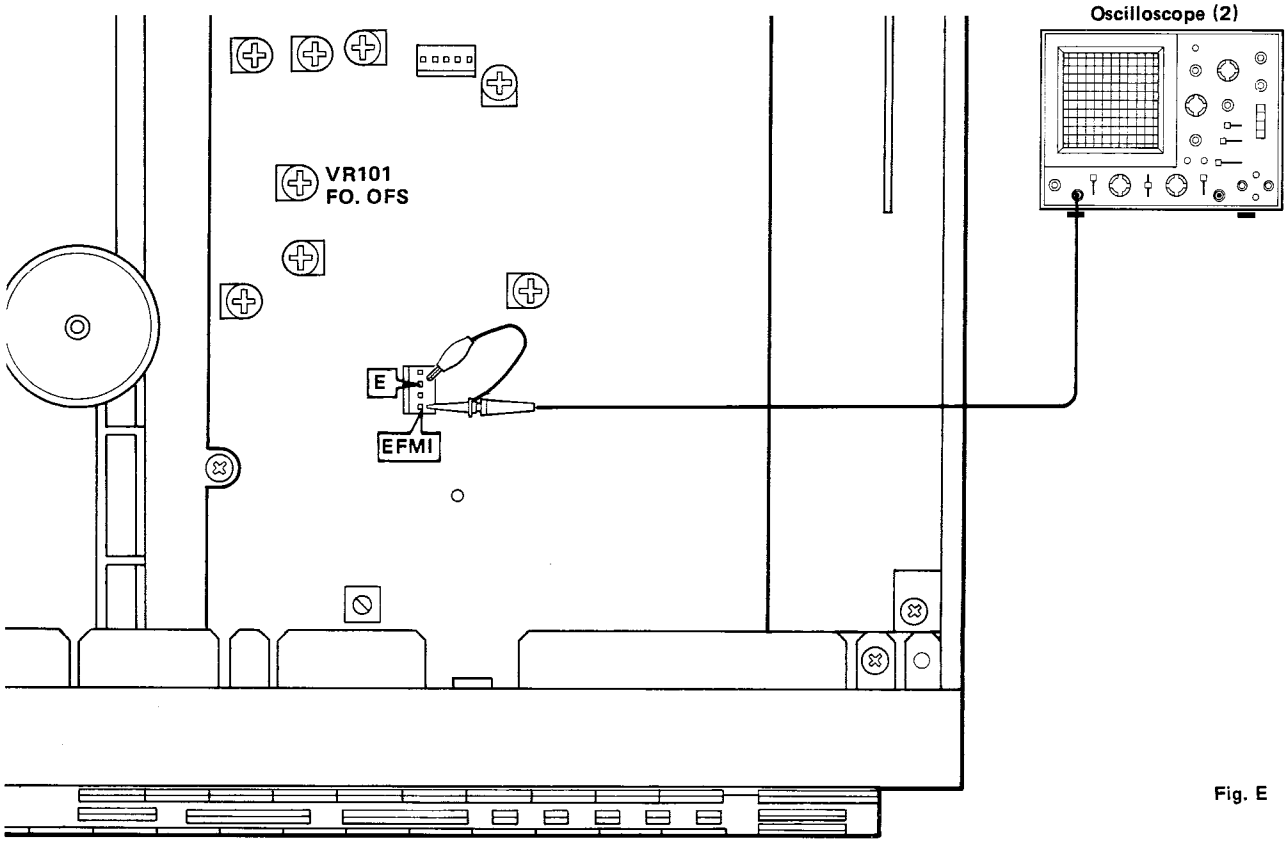
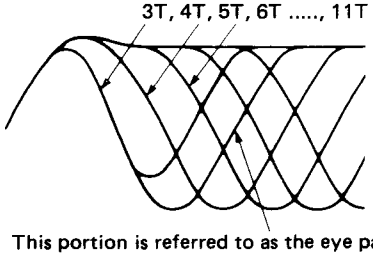


Fig. E

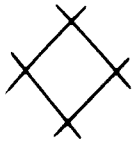
Waveforms 3T – 11T.



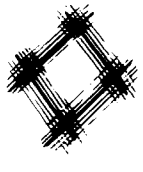
This portion is referred to as the eye pattern.

The abnormal eye pattern has less distinct lines and smaller amplitude than that of the good waveform.

Good waveform



Abnormal waveform



Adjust so that the good waveform is obtained.

Adjustment of HF Gain (Step 5)

Oscilloscope (2) setting

- AC coupling
- 0.5 V/div range (Vertical)
  (50 mV/div when 10 : 1 probe is used)
- 0.2 ~ 0.5 μsec/div time (Horizontal)

① Connect the oscilloscope (2) to the EFMI terminal.
② Load the test disc.
③ Press the PLAY key.
④ Adjust VR103 (HF G) so that the EFMI level becomes 2.5 Vp-p.
* Adjust at the center of the disc.

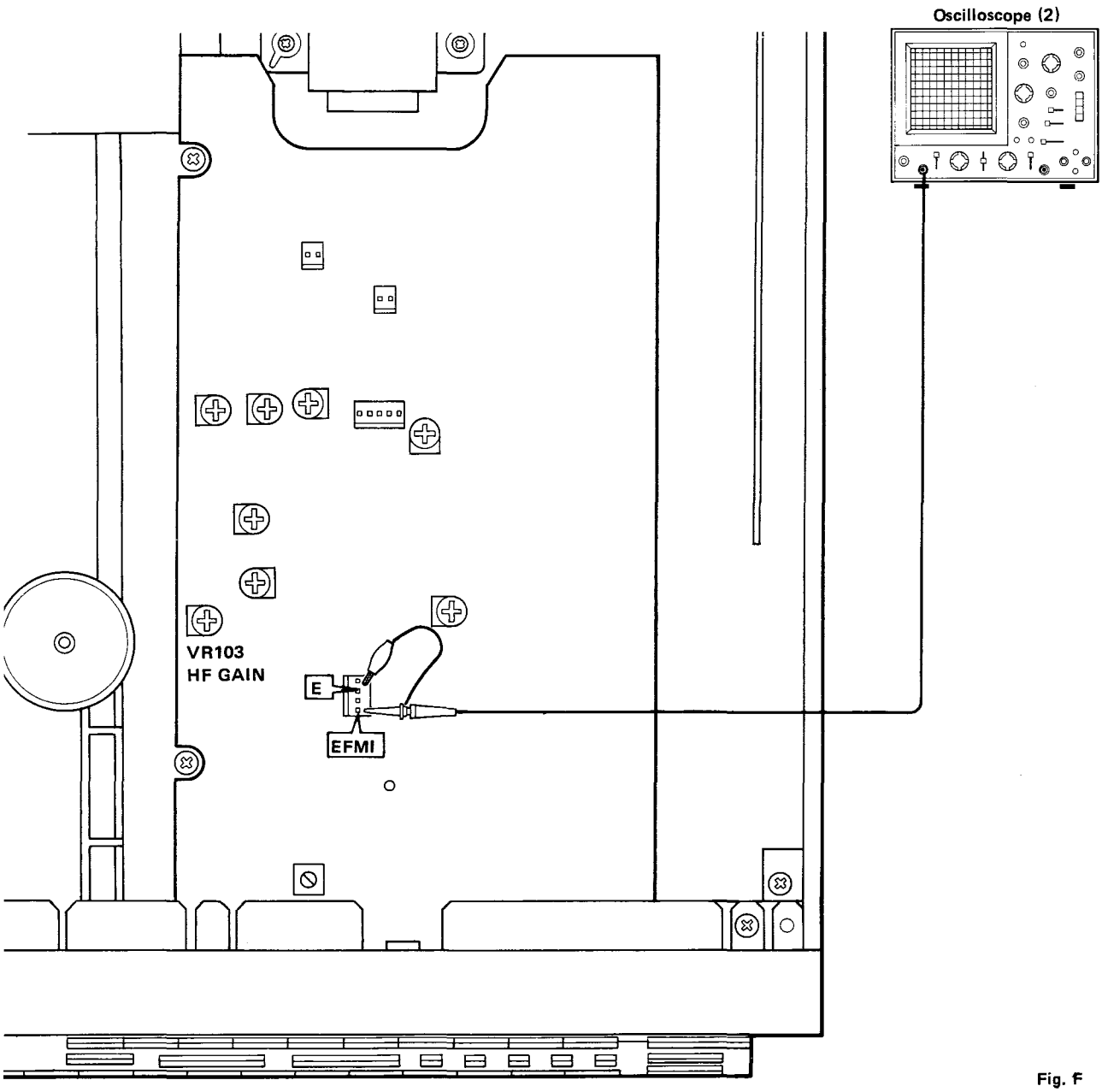


Fig. F

Adjustment of Focus Gain (Step 6)

* This adjustment requires two single channel AC voltmeters or one dual channel AC voltmeter.

① Connect the filter and measuring instruments, as shown in Fig. G.
[Apply an 800 Hz, 4.5 Vrms signal from the AF oscillator to FDI terminal via the resistor (220 kiloohms) in the filter.]
② Set SW2 to OFF.
③ Set SW1 to F (FOCUS).
④ Press POWER Key. (POWER ON)
⑤ Load the test disc.
⑥ Press PLAY Key.
⑦ Set SW2 to ON.
⑧ Read the indications of the AC voltmeters (CH1: E_{FO}, CH2: E_R), adjust VR102 (FOCUS GAIN) so that they satisfy the rating.

Rating: $E_{FO} - E_R = -5dB$

Example	[0dBV = 1V]
E_{FO}	= −26dBV (50mV)
E_R	= −21dBV (89mV)

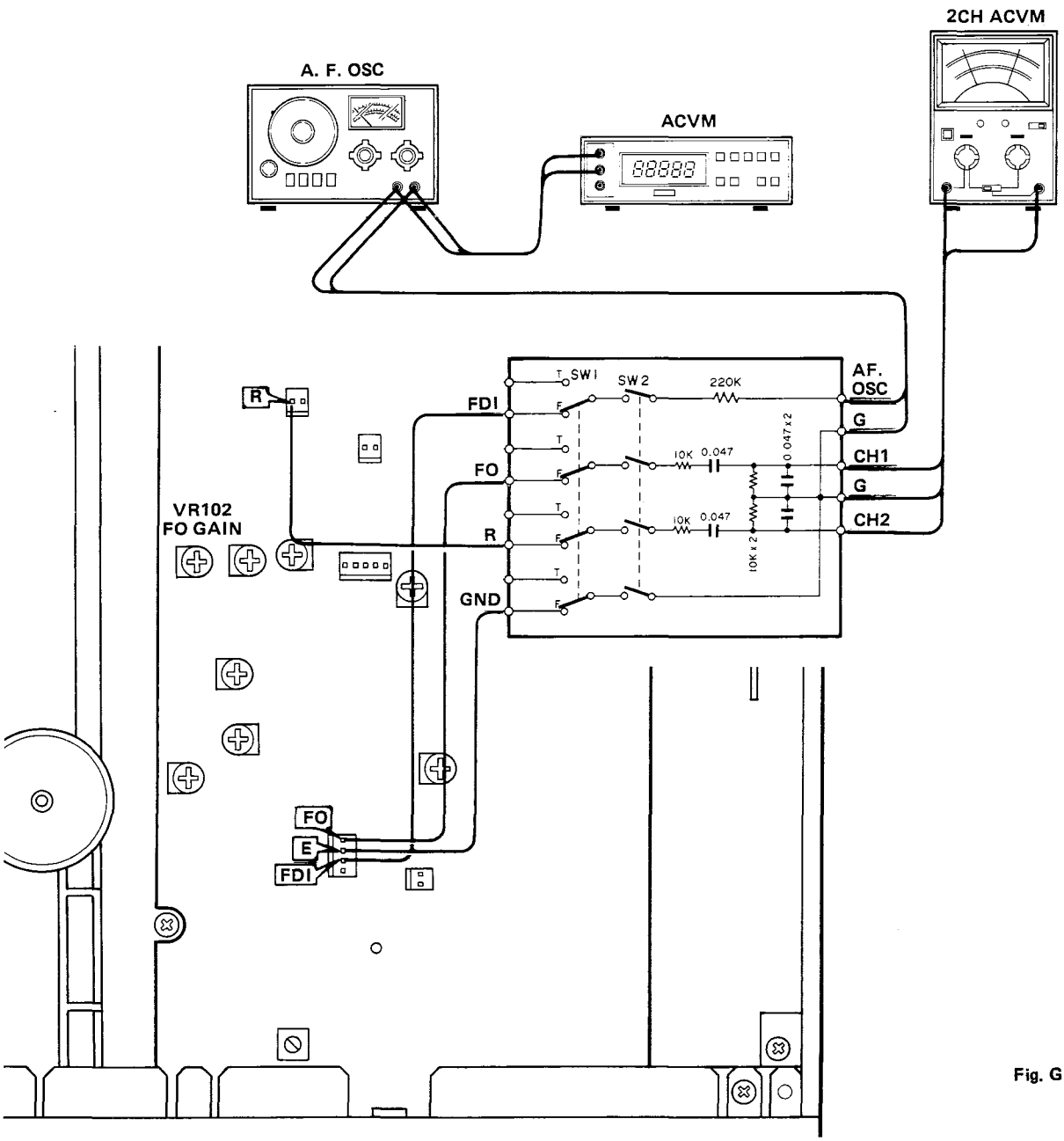


Fig. G

Adjustment of Tracking Gain (Step 7)

* This adjustment requires two single channel AC voltmeters or one dual channel AC voltmeter.

① Connect the filter and measuring instruments, as shown in Fig. H.
[Apply a 800 Hz, 100 mVrms signal from the AF oscillator to TDI terminal via the resistor (220 kiloohms) in the filter.]
② Set SW2 to OFF.
③ Set SW1 to T (TRACKING).
④ Press POWER key. (POWER ON)
⑤ Load the test disc.
⑥ Press PLAY key.
⑦ Set SW2 to ON.
⑧ While observing the indications of the AC voltmeters (CH1 : E_{TE}, CH2 : E_Q), adjust VR106 (TRACKING GAIN) so that they satisfy the rating.

Rating: $E_{TE} - E_Q = 16dB$

Example	[0dBV = 1V]
E_{TE}	= −14dBV (200mV)
E_Q	= −30dBV (32mV)

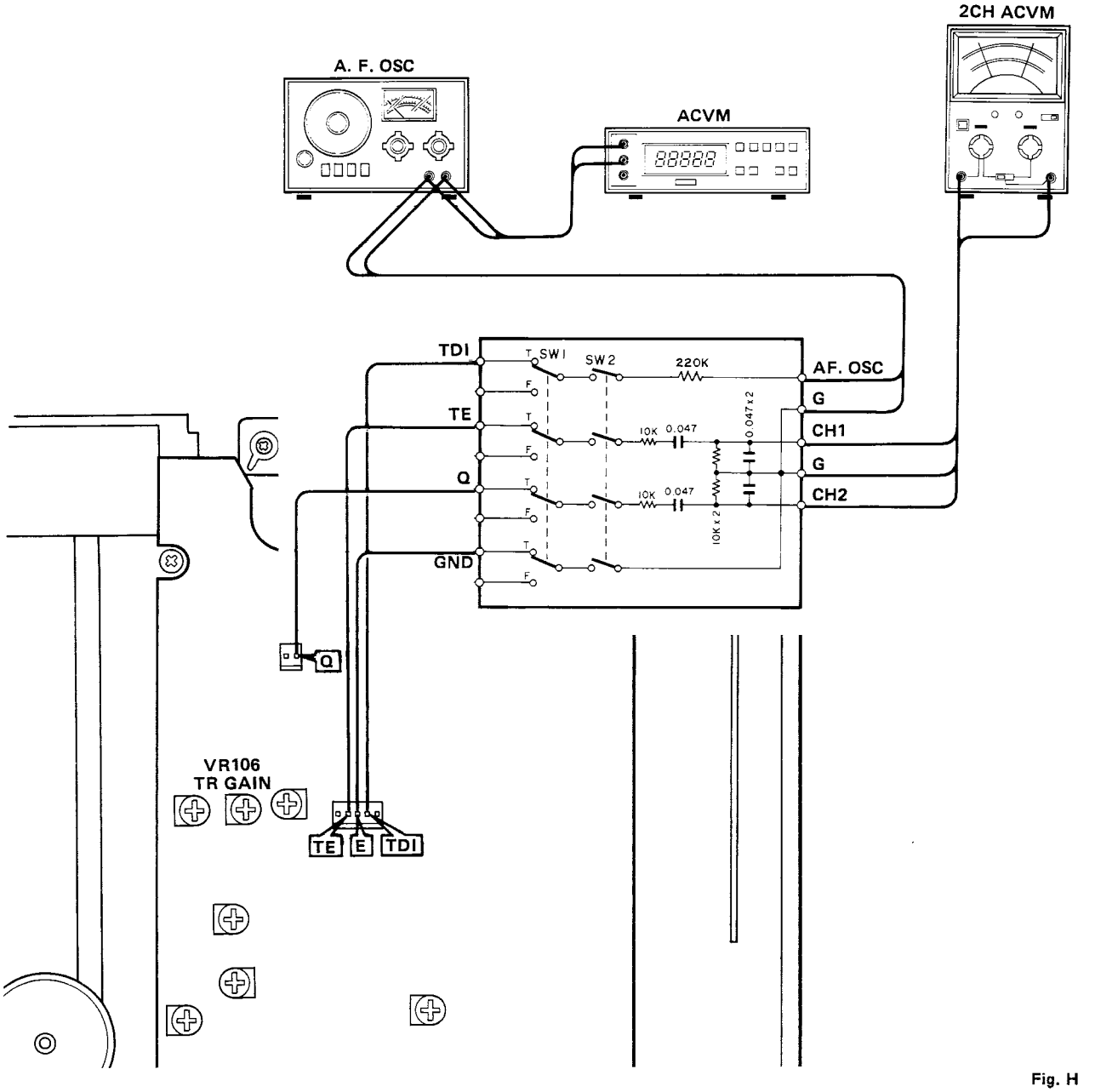


Fig. H

Adjustment of Tracking Offset (Step 8)

① Connect a DC voltmeter to [Q] and [E] terminals.
② Press POWER key. (POWER ON)
③ Press STOP key.
④ Short between the [TROF] and [E] terminals. (TRACKING SERVO → ON)
⑤ While observing the indication (E_Q) of the DC voltmeter, adjust VR105 (TRACKING OFFSET) so that it satisfies the rating.

Rating: E_Q = 0 V DC ± 25mV DC

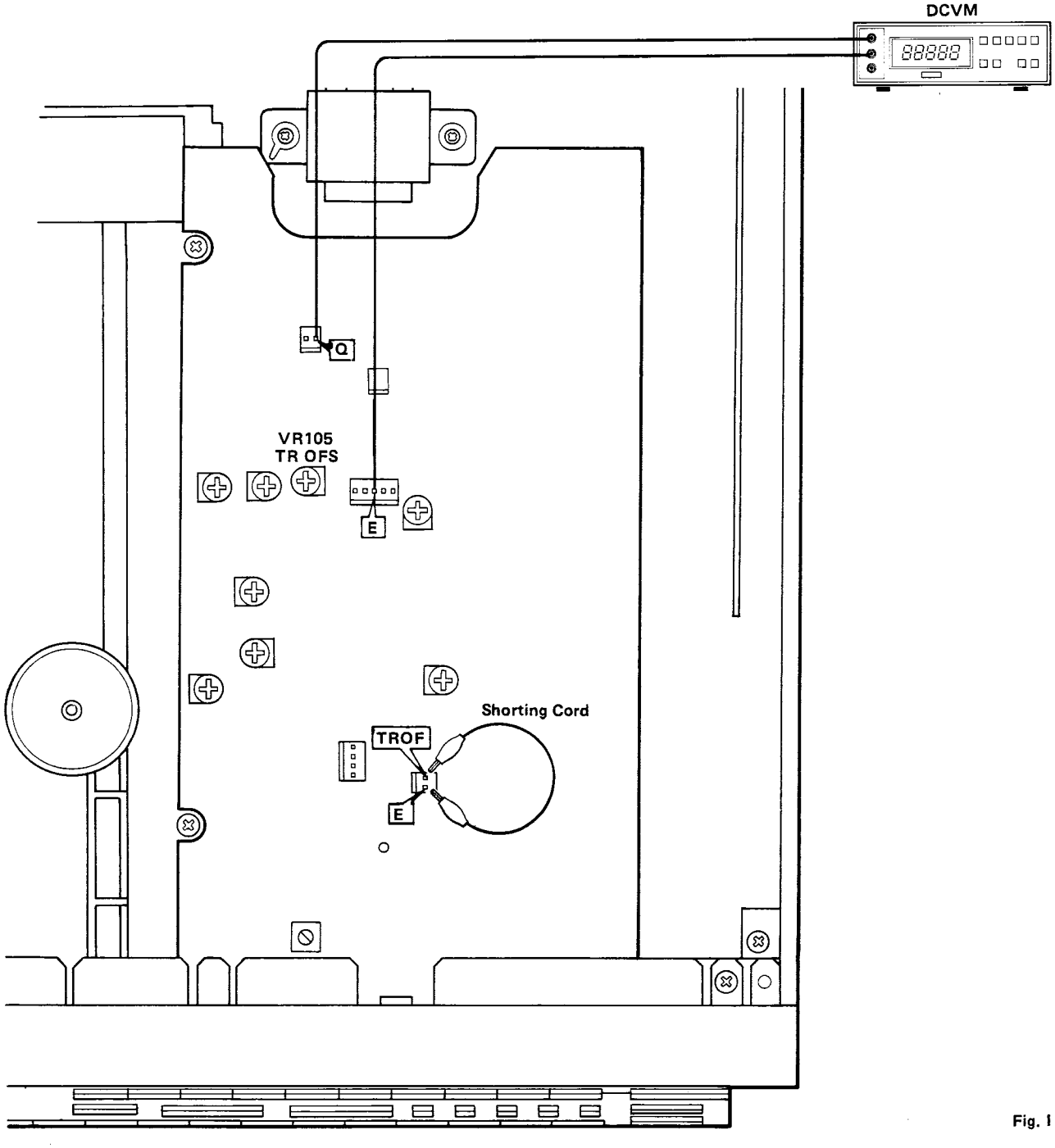


Fig. 1

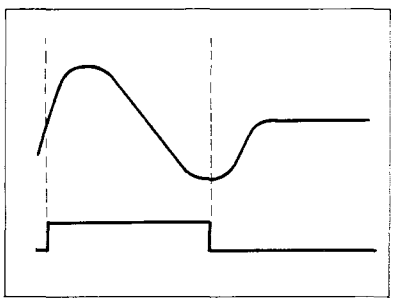
Adjustment of Kick Gain (Step 9)

Oscilloscope (1) (2-ch oscilloscope) Settings

- DC coupling
- CH1 → TER terminal: 0.1V/div (Vertical)
  (10 mV/div when 10 : 1 probe is used)
- CH2 → TRHD terminal: 5V/div (Vertical)
  (0.5V/div when 10 : 1 probe is used)
- TRIGGER MODE: 2 CH
- 0.2msec/div time (Horizontal)

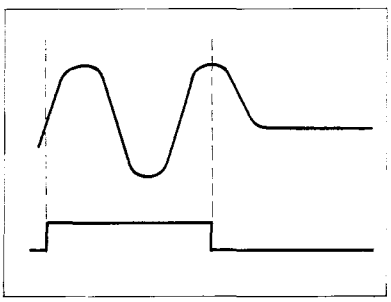
① Connect the measuring instruments, as shown in Fig.J. L.
② Press POWER key. (POWER ON)
③ Load the test disc.
④ The POWER switch is turned OFF.
⑤ Set to the TEST mode.
⑥ Press the EJECT key.
⑦ Press PLAY key.
⑧ Observe waveform while pressing Fast Forward mode key (▶▶).
⑨ Adjust VR107 (KICK GAIN) so that the TER signal cycle is 1.0+0.5 when TRHD signal level is High.
* Adjust at the inner circumference of the disc.
⑩ Press Reverse mode key (◀◀) and confirm that TER signal cycle is within the above specification but in reverse phase.

NG



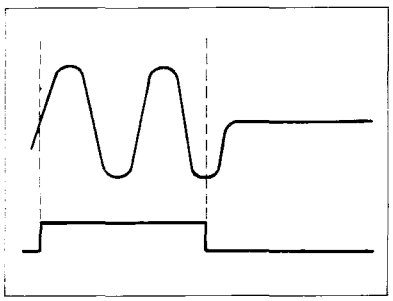
This shows about 0.75 cycle which is incorrect

OK



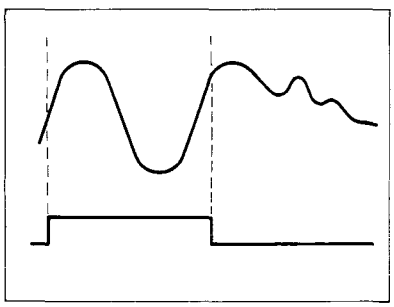
This shows about 1.25 cycle which is within specification.

NG



This shows about 1.75 cycle which is incorrect

* The TER waveform after the TRHD rise should converge gently.



NG

Not converging gently

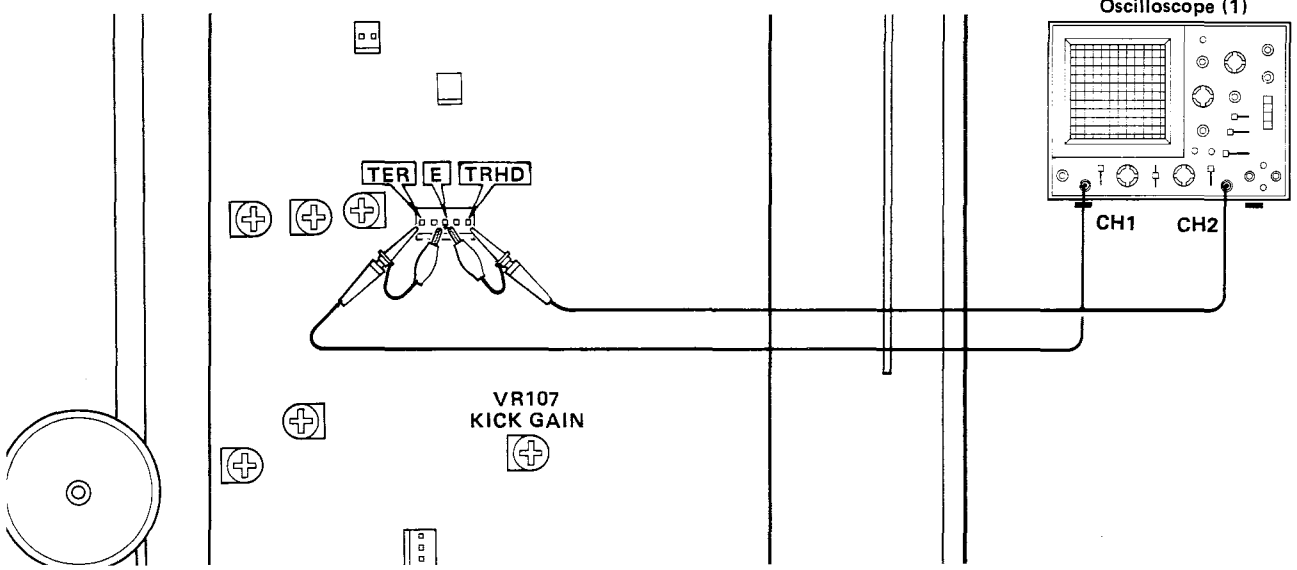
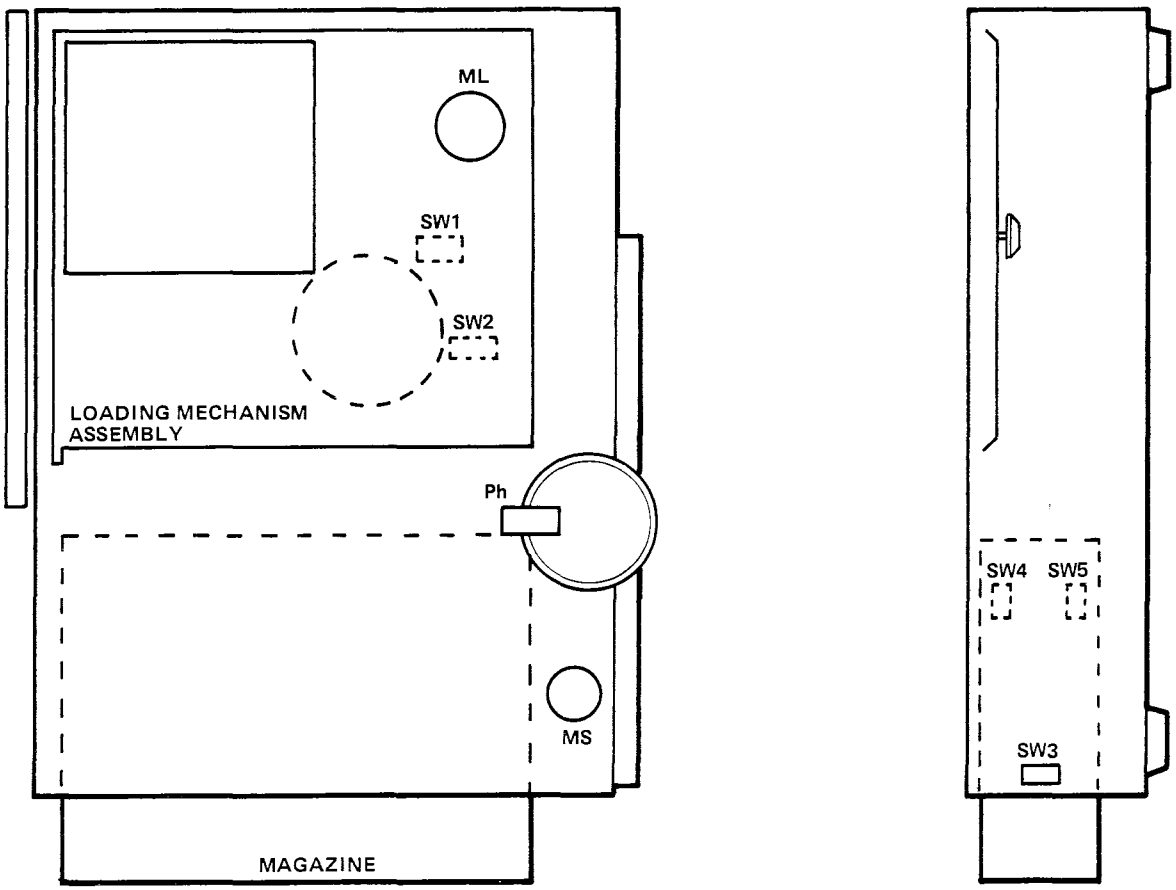


Fig. J

■ OPERATION EXPLANATIONS FOR EACH MODE



Loading part

ML: Motor for tray pull-out, storage, and chucking
SW1: Chucking completion detect switch (S355)
SW2: Tray storage completion detect switch (S356)

Disc selection part

MS: Motor for disc selection (loading mechanism assembly up/down) and magazine pull out
Ph: Disc selection position detection photosensor
SW3: Mechanism initialization position detect switch (S353)

Magazine part

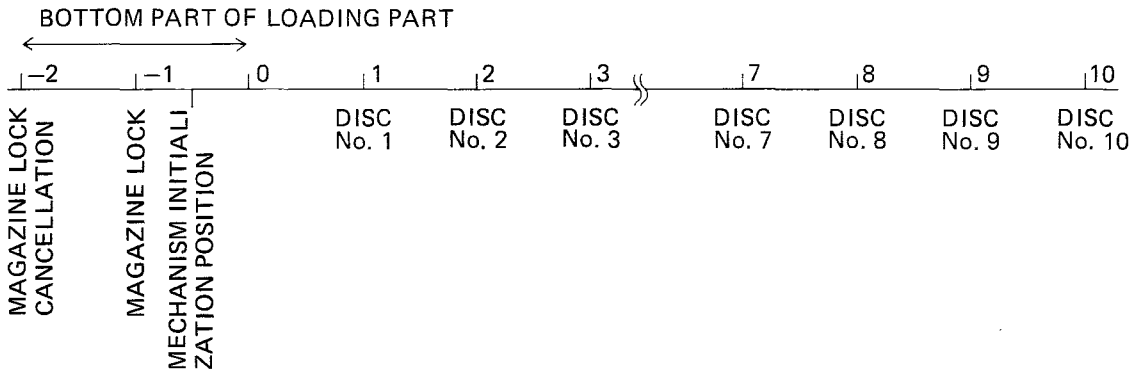
SW4: Magazine 10/1 discrimination switch (S352)
SW5: Magazine existence detect switch (S351)

The relation between photosensor, disc selection position, magazine lock, and lock cancellation is shown below.

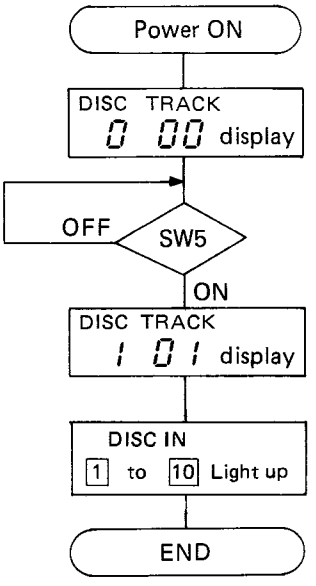
Bottom part of the loading part

The slot position in photo sensor and the position of each disc are decided mechanically, the mechanism initialization switch (SW3) becomes OFF, and the position of the second slot corresponds to the disc height of the magazine No. 1.

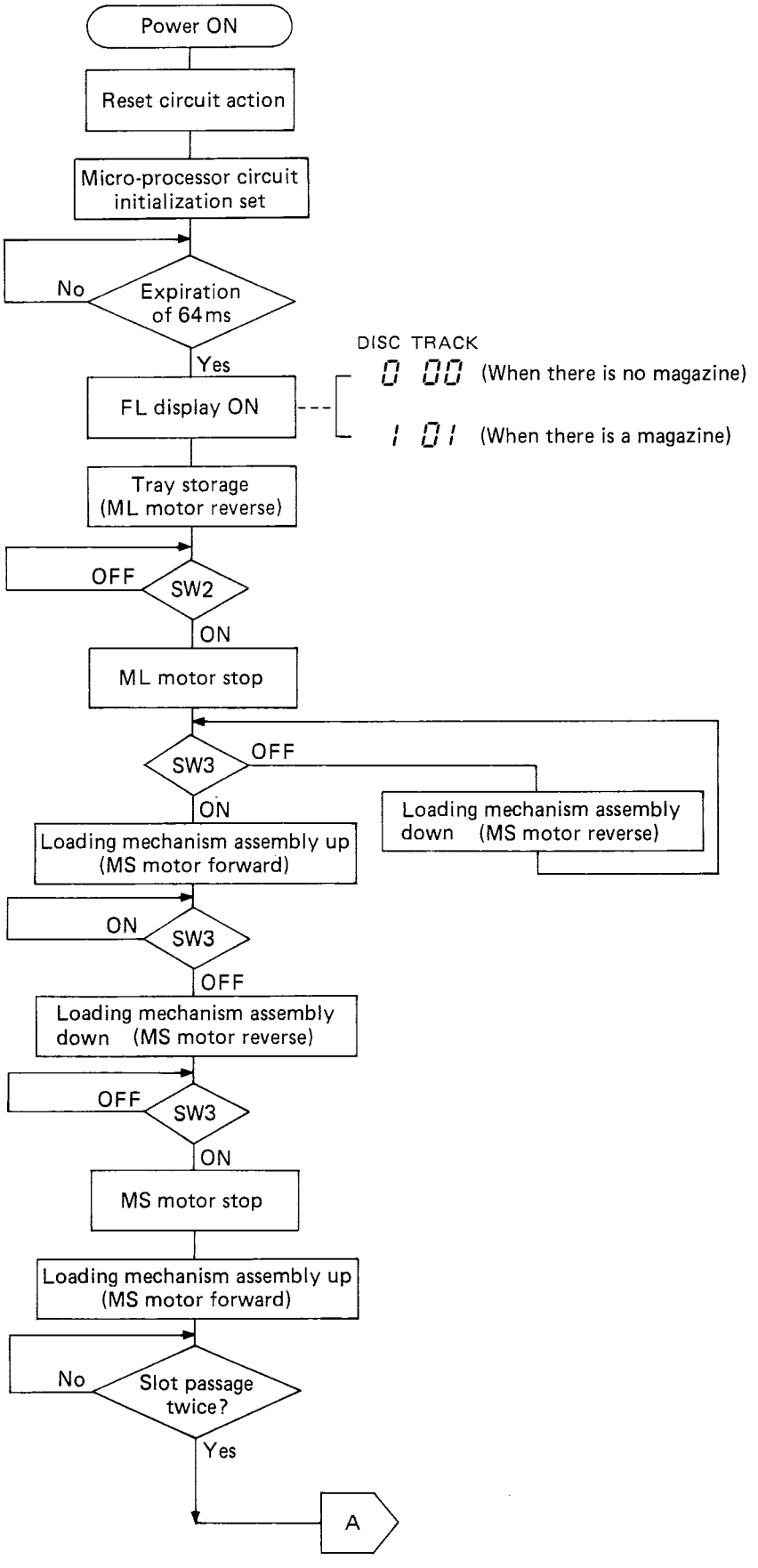
The height at the time of playing with one magazine corresponds to the height of the disc No. 8 of the 10 disc magazine.



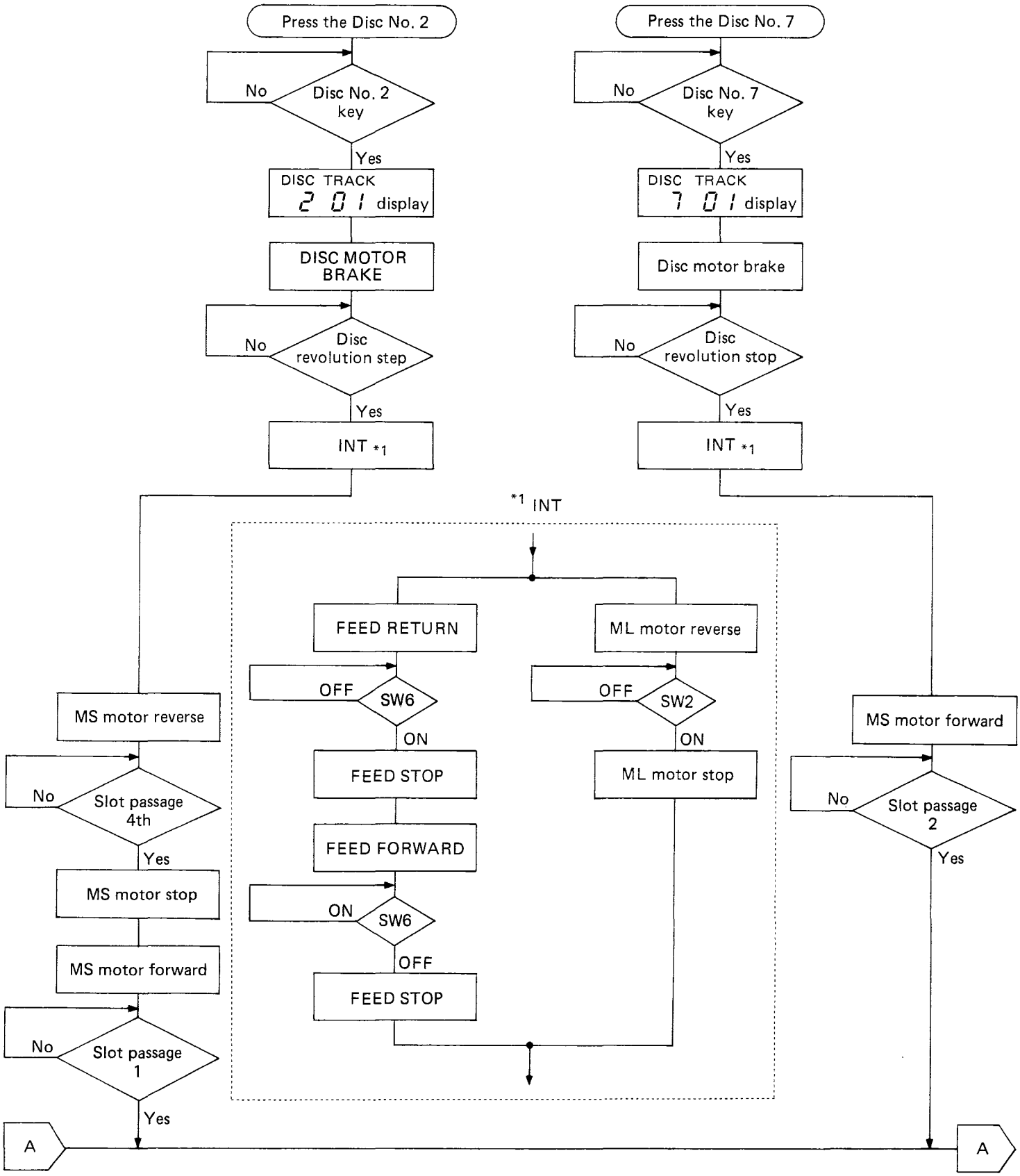
A) Magazine setting from no-magazine status



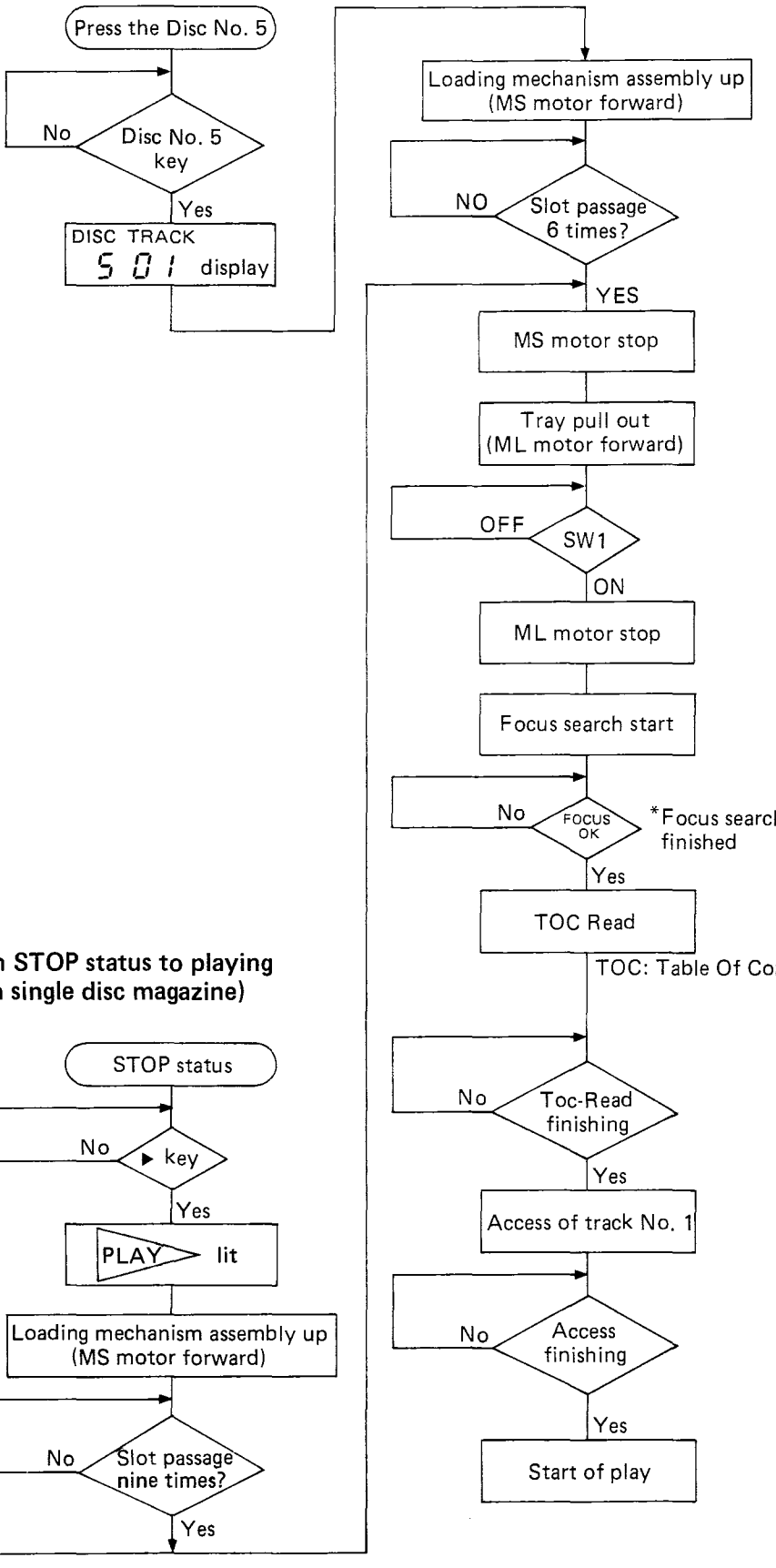
B) At the time of power ON



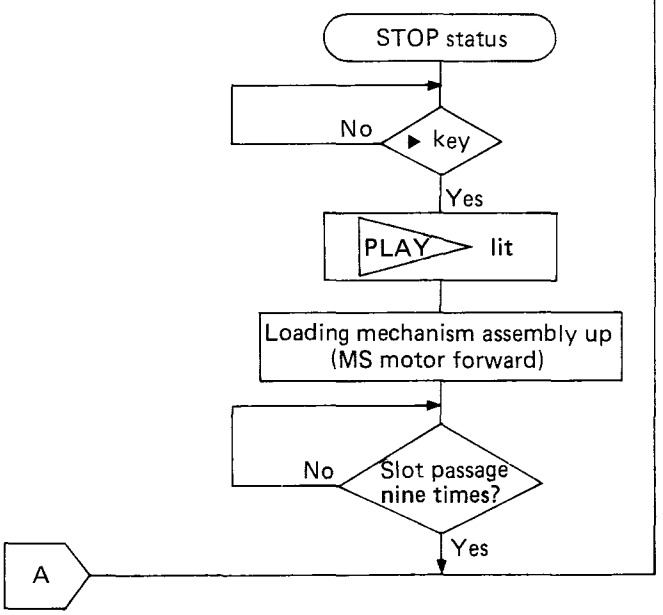
C) Disc change during playing (Now playing Disc 5)



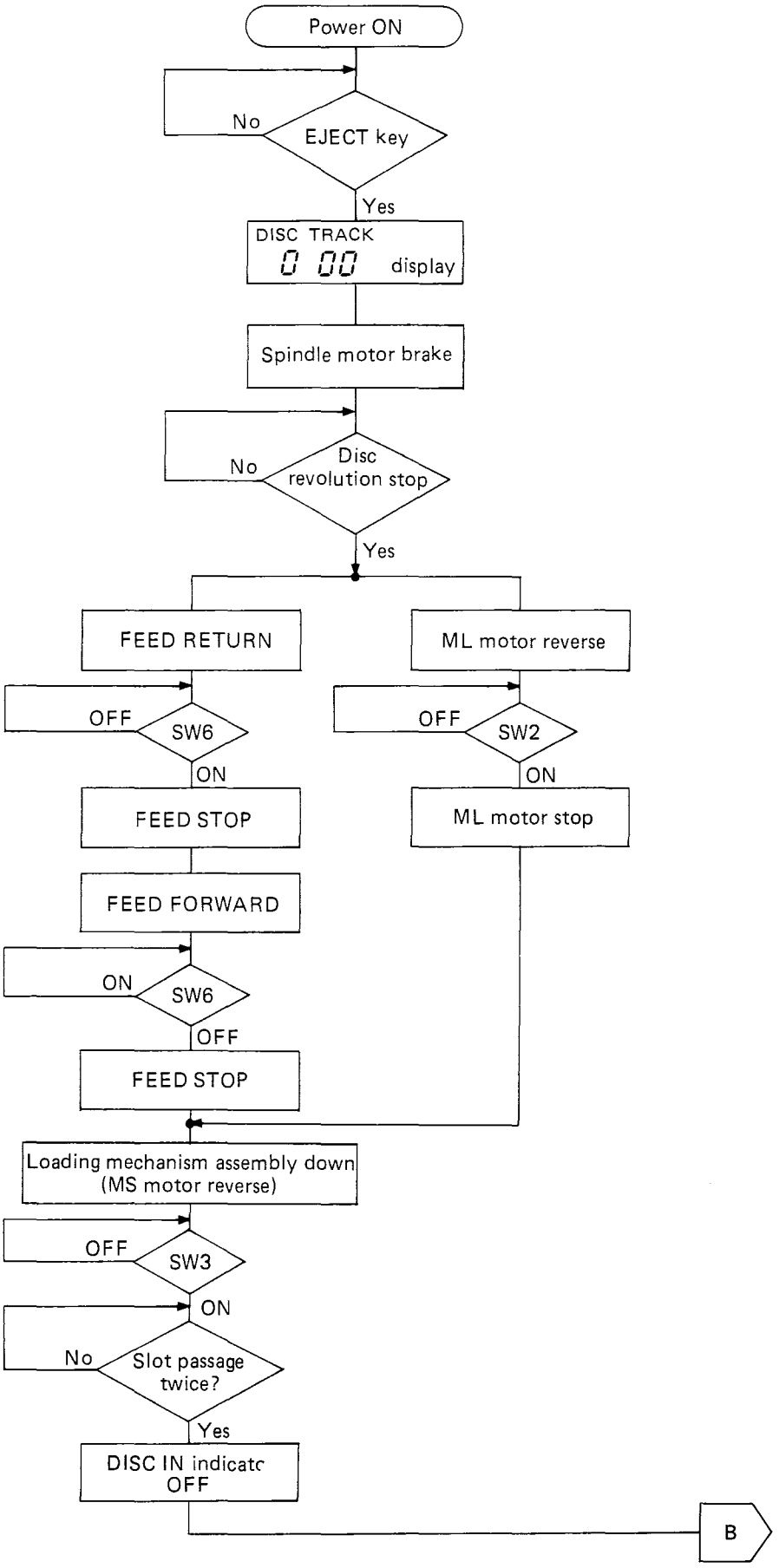
D) Playing of disc No. 5 from STOP status



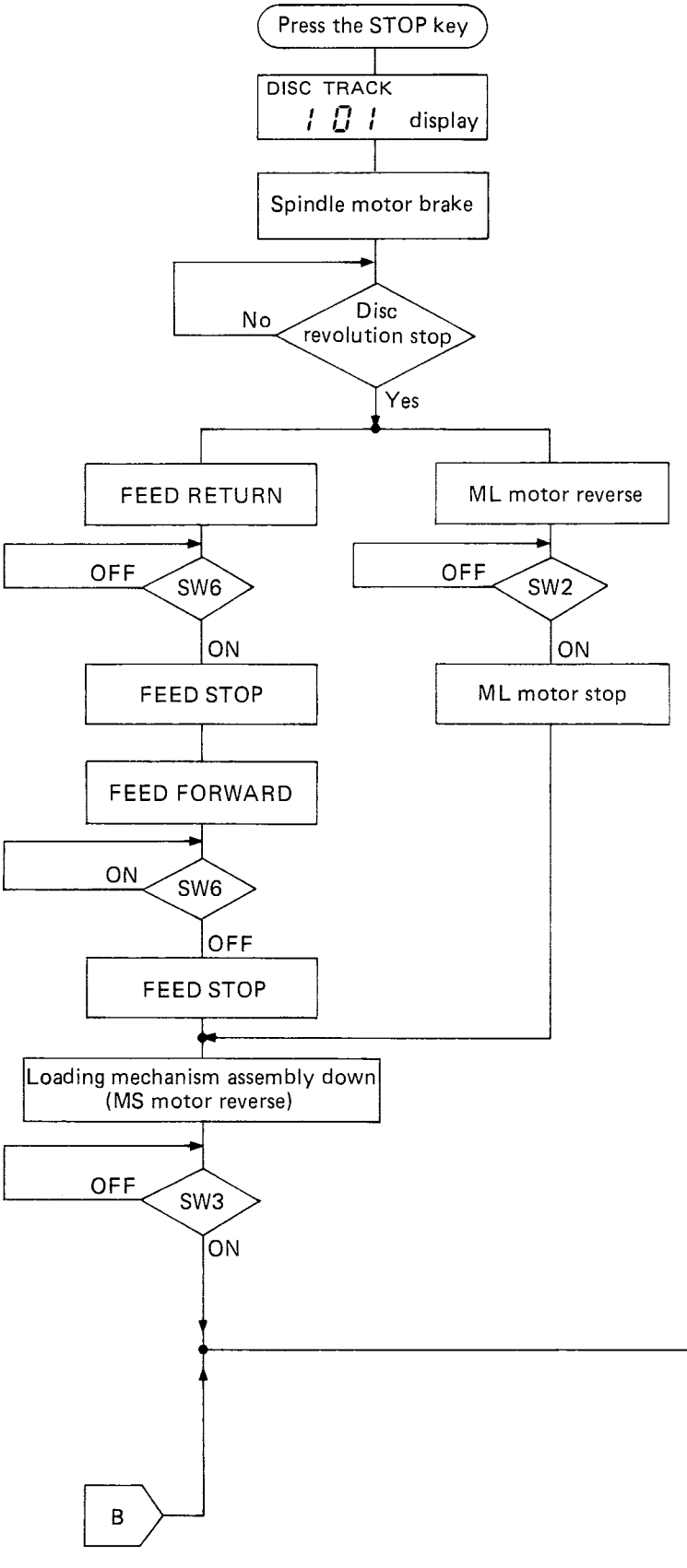
E) From STOP status to playing (with single disc magazine)



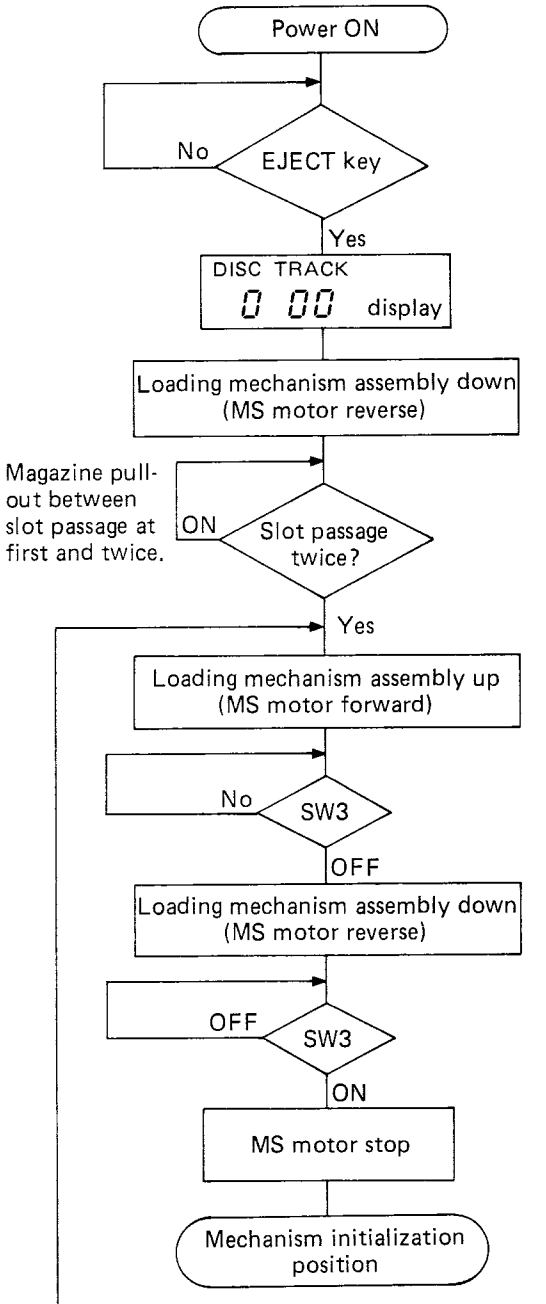
F) From playing to EJECT



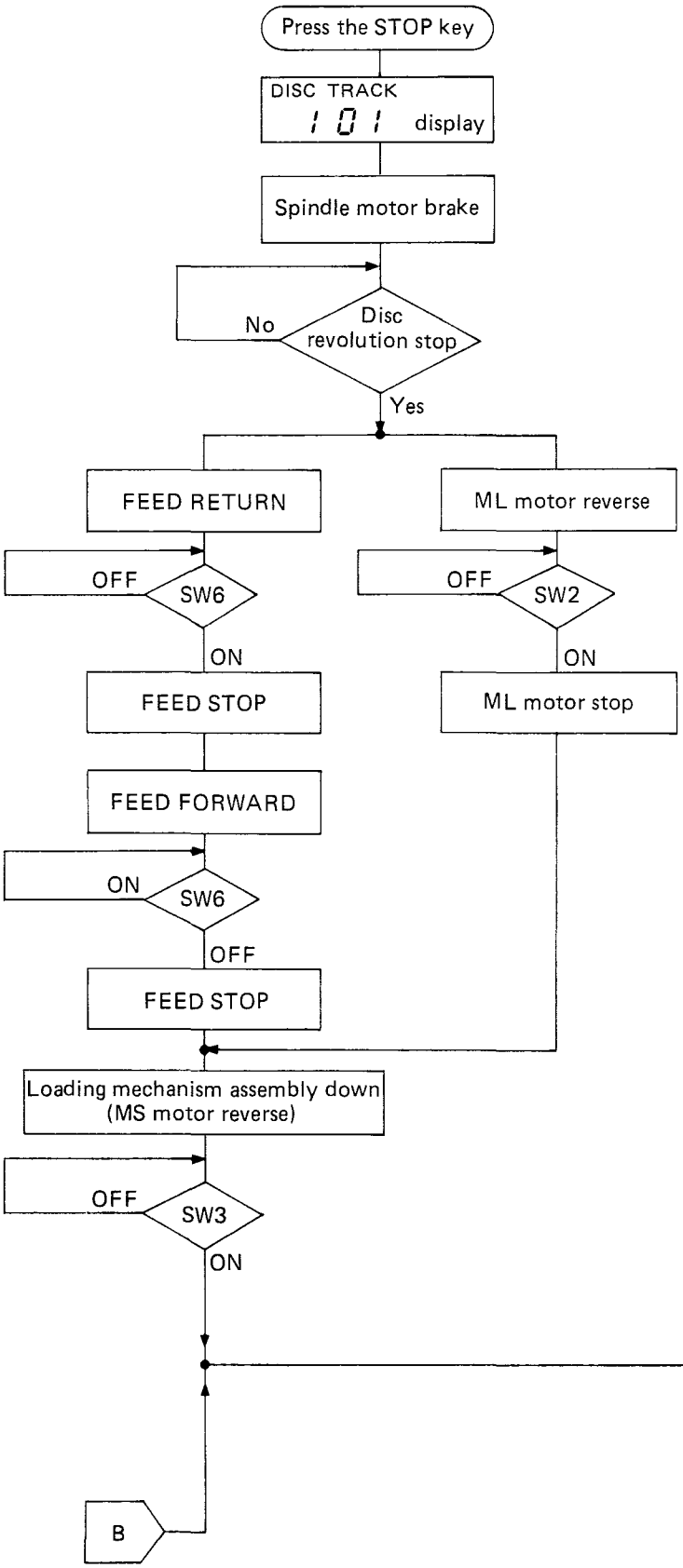
G) From playing to STOP



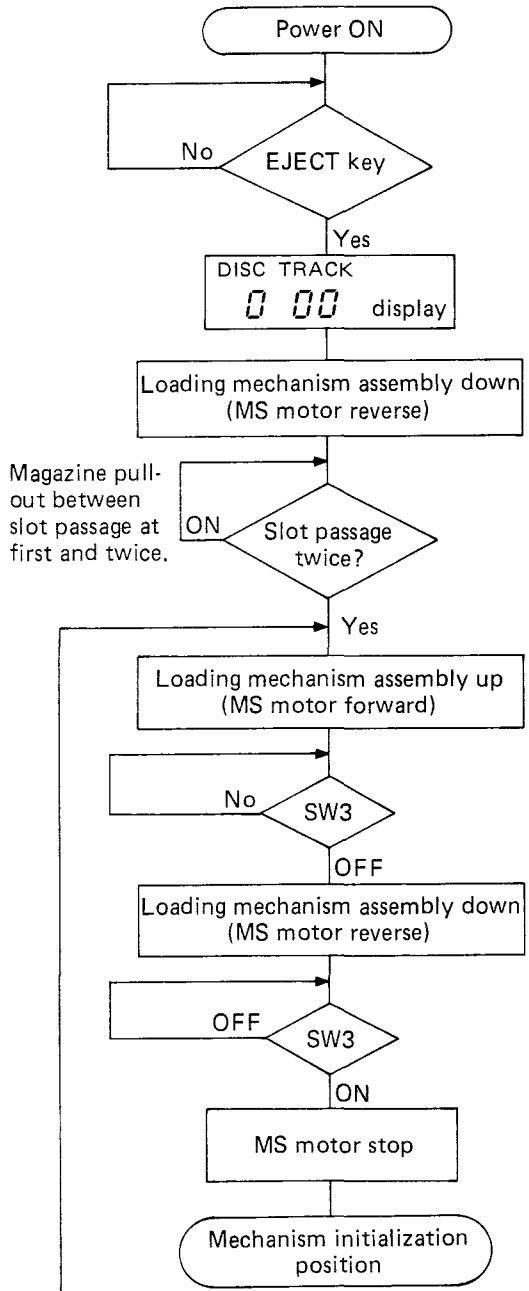
H) Magazine pull-out from STOP status (mechanism initialization position)



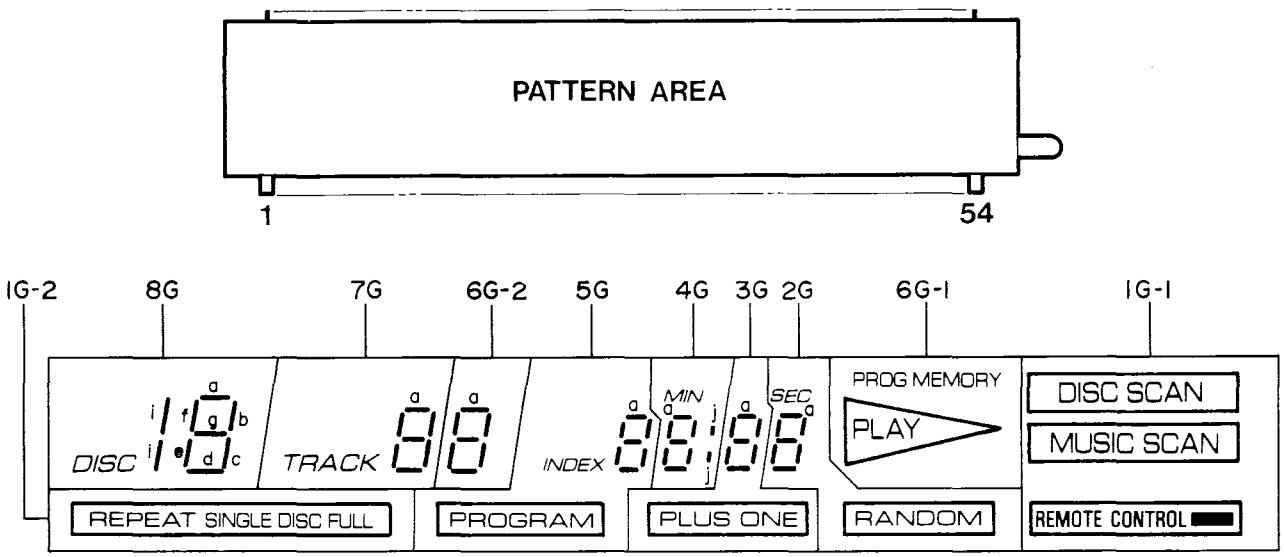
G) From playing to STOP



H) Magazine pull-out from STOP status (mechanism initialization position)



■ DISPLAY DATA (V401:8-MT-35GK)



PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CONNECTION	F	F	NP	NP	NP	NP	NP	NP	NP	NP	j	i	NP	NP	NP	NP	NP	NP	NP	1G	2G	NP	3G	4G	NP	NP	NP	5G	6G	NP	7G	8G	NP	NP	NP	NP	NP	NP	h	g

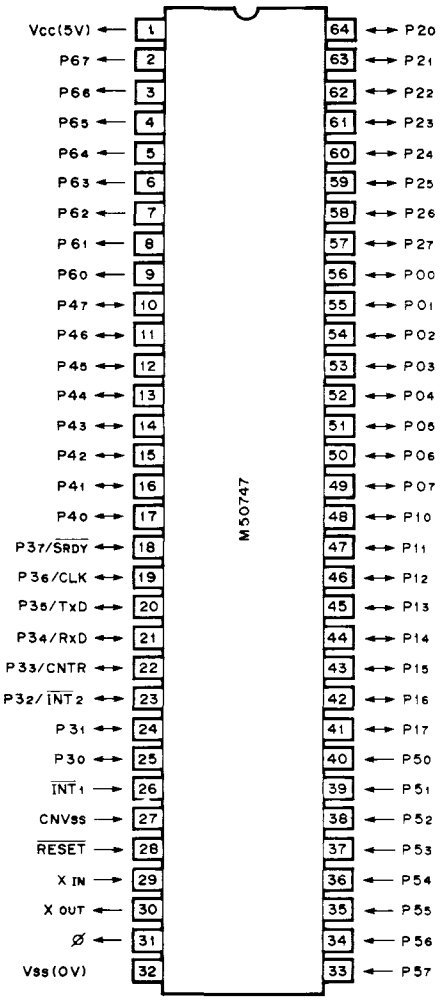
PIN NO.	41	42	43	44	45	46	47	48	49	50	51	52	53	54
CONNECTION	NP	NP	NP	f	e	d	NP	c	b	a	NP	NP	F	F

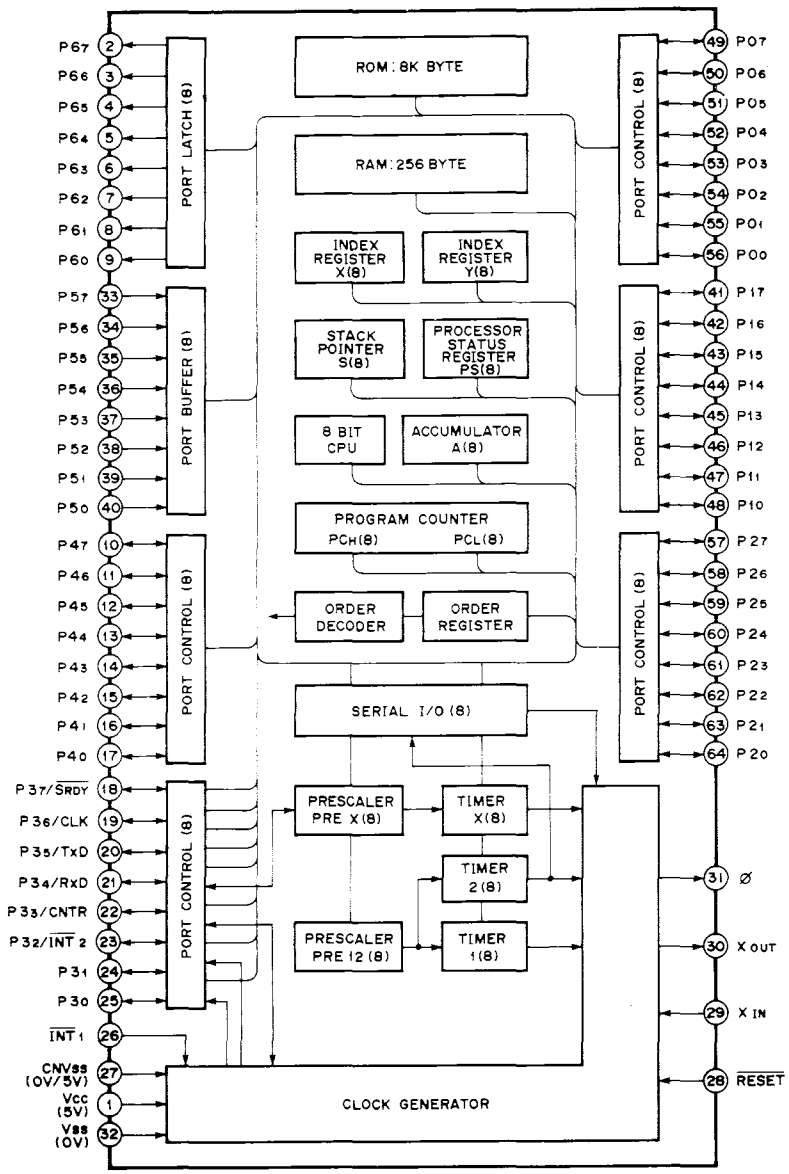
ANODE CONNECTION

	8G	7G	6G-2	6G-1	5G	4G	3G	2G	1G-2	1G-1
a	a	a	a	-	a	a	a	a	-	DISC SCAN
b	b	b	b	-	b	b	b	b	-	MUSIC SCAN
c	c	c	c	-	c	c	c	c	-	REMOTE CONTROL
d	d	d	d	-	d	d	d	d	-	■
e	e	e	e	-	e	e	e	e	REPEAT	-
f	f	f	f	-	f	f	f	f	SINGLE	-
g	g	g	g	-	g	g	g	g	DISC	-
h	-	-	-	-	-	-	-	-	FULL	-
i	:	TRACK	-	PROG MEMORY	INDEX	MIN	PLUS ONE	SEC	-	-
j	DISC	-	-	PLAY	PROGRAM	:	-	RANDOM	-	-

■ IC DATA

IC116: M50747 –136SP or M50747E –136SP
8 bit μ-COM

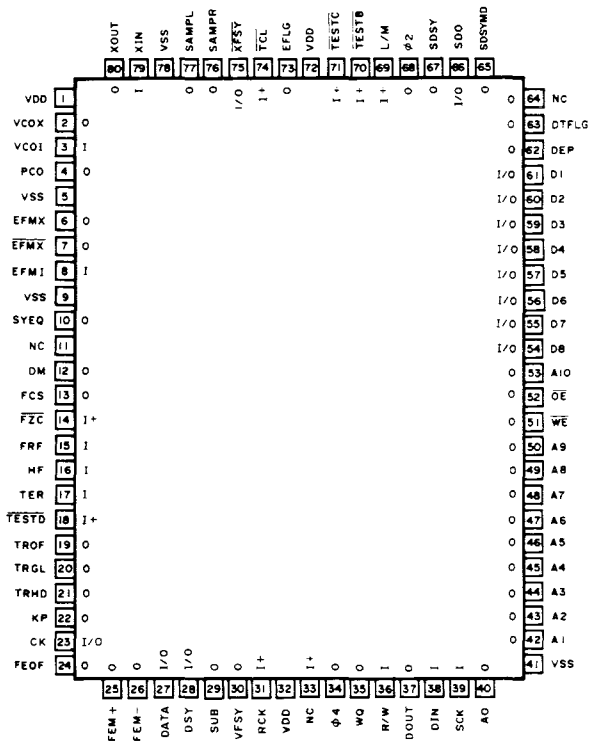


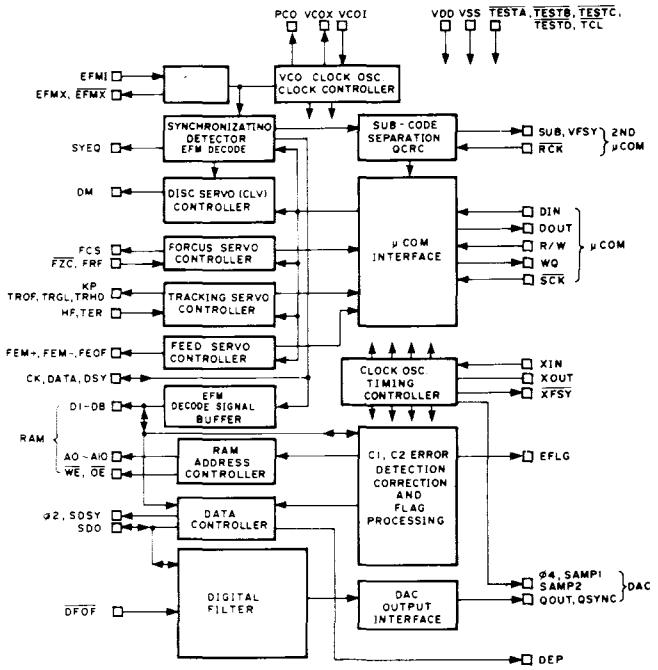


Pin No.	Pin Name	Description	I/O	Active	Function
1	Vcc	VDD			5V
2	P67 (O)	D7	O	H	Digit line
3	P66 (O)	D6	O	H	
4	P65 (O)	D5	O	H	
5	P64 (O)	D4	O	H	
6	P63 (O)	D3	O	H	
7	P62 (O)	D2	O	H	
8	P61 (O)	D1	O	H	
9	P60 (O)	D0	O	H	
10	P47	SW7	I	H	DISC MECHA. SW
11	P46	SW6	I	H	
12	P45	SW5	I	H	
13	P44	SW4	I	H	
14	P43	SW3	I	H	
15	P42	SW2	I	H	
16	P41	SW1	I	H	
17	P40	ACL	I	H	
18	P37/SRDY				
19	P36/CLK	$\overline{SCK}$	I/O		SPC Interface
20	P35/TXD	SOUT	O		
21	P34/RXD	SIN	I		
22	P33/CNTR	R/W	O		
23	P32/INT2				Not Used
24	P30	$\overline{WQ}$	I		SPC Interface
25	P31	$\overline{SCK}$	O		
26	INT1	HOLD			
27	CNVSS				GND
28	RESET	$\overline{RES}$	I		Reset
29	XIN	XI	I		8 MHz Clock
30	XOUT	XO	O		
31	ϕ	ϕ	O		Timing output
32	VSS	VSS			GND
33	P57 (I)	K7	I		Key input line
34	P56 (I)	K6	I		
35	P55 (I)	K5	I		
36	P54 (I)	K4	I		
37	P53 (I)	K3	I		
38	P52 (I)	K2	I		
39	P51 (I)	K1	I		
40	P50 (I)	K0	I		
41	P17	$\overline{LS}$	O	H	Laser output
42	P16	PLAY	O		PLAY mode output
43	P15	R5	I		Remote control interface
44	P14	R4	I		
45	P13	R3	I		
46	P12	R2	I		
47	P11	R1	I		
48	P10	R0	I		
49	P07	MS+	O	H	Disc Select Motor Control
50	P06	MS–	O	H	
51	P05	ML+	O	H	Loading Motor Control
52	P04	ML–	O	H	
53	P03	HT	O	H	Feed Motor Control
54	P02	k	O	H	FLT segment
55	P01	j	O	H	
56	P00	i	O	H	
57	P27	h	O	H	
58	P26	g	O	H	
59	P25	f	O	H	
60	P24	e	O	H	
61	P23	d	O	H	
62	P22	c	O	H	
63	P21	b	O	H	
64	P20	a	O	H	

IC111: YM3616
Signal Processor & Controller

YM3616 is a CMOS LSI for signal processing and servo control of the compact disc player.
It executes such signal processing as demodulation of the EFM signal from the optical pick-up, detection and correction of the erroneous signal and digital filtering which helps to improve the sound quality, as well as such intelligent servo controlling as focus, disc, tracking and feeding.

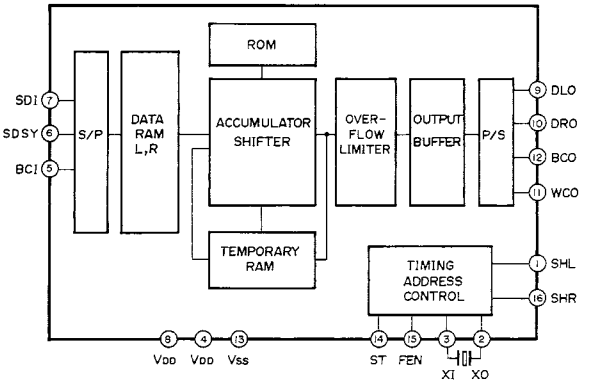




Pin No.	Pin Name	I/O	Function
1	VDD		Power Supply
2	VCOX	O	Clock Playback Circuit 4PCO
3	VCOI	I	
4	PCO	O	
5	VSS		GND
6	EFMX	O	EFM Signal External Circuit
7	$\overline{\text{EFMX}}$	O	
8	EFMI	I	
9	VSS		GND
10	SYEQ	O	Synchronized Uniform Signal
11	N.C.		Not Use
12	DM	O	Disc Servo { LOW (0V): FORWARD OPEN (2.5V): STOP HIGH (5V): REVERSE
13	FCS	O	Focus Servo System Input
14	$\overline{\text{FZC}}$	I	
15	FRF	I	
16	HF	I	Tracking Servo System Input
17	TER	I	
19	TROF	O	
20	TRGL	O	
21	TRHD	O	{ LOW (0V): REW OPEN (2.5V): STOP HIGH (5V): FF
22	KP	O	

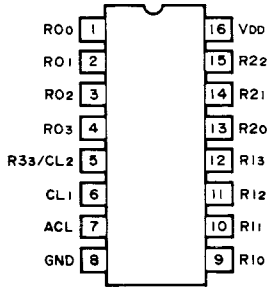
Pin No.	Pin Name	I/O	Function
23	CK		EFM Demodulated Signal Check Output (4.3218MHz, clock)
24	FEOF	O	Feed Servo System
25	FEM+	O	
26	FEM–	O	
23	CK	I/O	EFM Demodulated Signal Check Output (4.3218MHz clock)
27	DATA	I/O	
28	DSY	I/O	
29	SUB	O	Sub-code Output
30	VFSY	O	
31	RCK	I	
32	VDD		Power Supply
33	NC	I	Not Use
34	ϕ4		4.3218 MHz Clock
35	WQ	O	Q Code Output System: Data Output to µCOM; Data I/O Control Signal; Clock for Data I/O; Data I/O from µCOM → Q code Output µCOM Command
37	DOUT	O	
36	R/W	I	
39	$\overline{SCK}$	I	
38	DIN	I	
41	VSS		GND
40	A0	O	RAM Connections
42	A1	O	
43	A2	O	
44	A3	O	
45	A4	O	
46	A5	O	
47	A6	O	
48	A7	O	
49	A8	O	
50	A9	O	
51	$\overline{WE}$	O	
52	$\overline{OE}$	O	
53	A10	O	
54	D8	I O	
55	D7	I O	
56	D6	I O	
57	D5	I O	
58	D4	I O	
59	D3	I O	
60	D2	I O	
61	D1	I O	
62	DEP	O	Deemphasis Signal
63	DTFLG	O	Data Error Signal; Digital Data Output; LSB first/MSB first; 2.1659MHz Clock; SB first (H)/MSB first (L) Switch for SDO; Test Terminal → Data Control Circuit Board Serial Signal Output
66	SDO	O	
67	SDSY	O	
68	ϕ2	O	
69	L/M	I	
71	$\overline{TESTC}$	I	
64	NC	O	Not Use; BB Word Clock for DAC; Digrich Signal; 4.3218MHz Clock → DAC Interface
65	SDSYMD	O	
76	SAMPR	O	
77	SAMPL	O	
34	ϕ4	O	
18	$\overline{TESTD}$	I	Test Terminal
70	$\overline{TESTB}$	I	
74	$\overline{TCL}$	I	
72	VDD		Power Supply
73	EFLG	O	C1, C2 Error Correction Check Signal
75	$\overline{XFSY}$	I/O	Synchronized Clock Signal
78	VSS		GND
79	XIN	I	Clock Oscillation
80	XOUT	O	

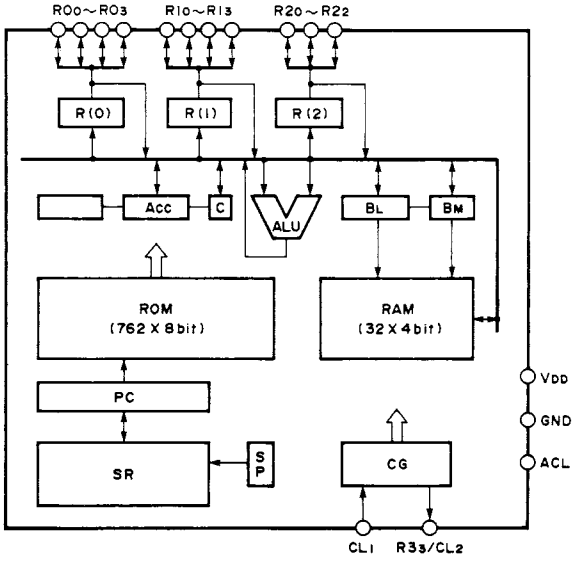
IC113: YM3404
Digital Filter



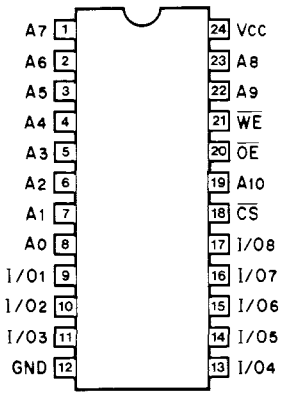
Pin No.	Pin Name	I/O	Function
7	SDI	I	Encoded digital signal serial input
6	SDSY	I	Distinction between Lch and Rch, Data input timing
5	BCI	I	Bit clock input for input data
3	XI	I	Clock OSC. 196 fs = 17.2872MHz or 192 fs = 16.9344 MHz
2	XO	O	
14	ST	I	1DAC = "L" 2DAC = "H" Switch input
15	FEN	I	System clock switch input 196 fs = "L" 192 fs = "H"
9	DLO	O	1DAC: L, Rch Data input 2DAC: Lch Data input
10	DRO	O	Rch Data output
11	WCO	O	Word clock for output data (DLO, DRO)
12	BCO	O	Bit clock for output data and system clock output for SPC II 98 fs = 8.6436MHz or 96 fs = 8.4672MHz
1	SHL	O	1DAC: Lch deglitch signal output 2DAC: L, Rch deglitch signal output
16	SHR	O	1 DAC: Rch deglitch signal output
8	VDD_1		Power supply +5V for digital signal
4	VDD_2		Power supply for clock and deglitch signal
13	Vss		GND

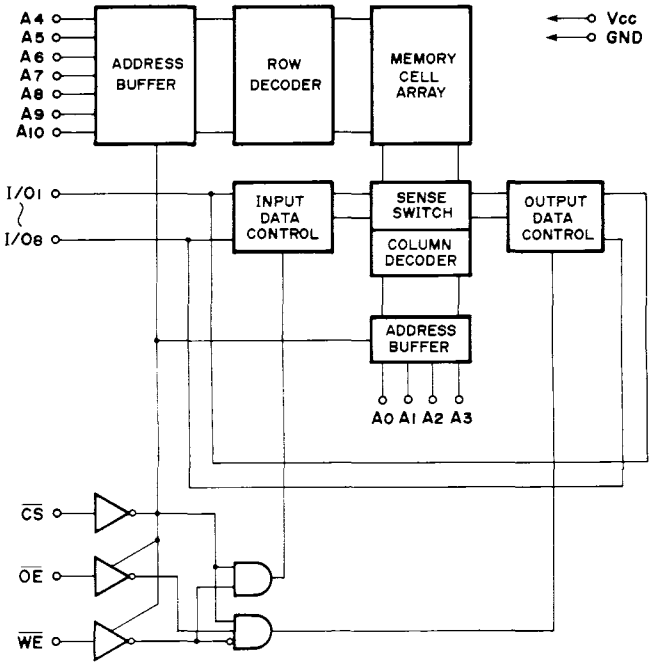
IC117: LU59522
4 bit μ-COM



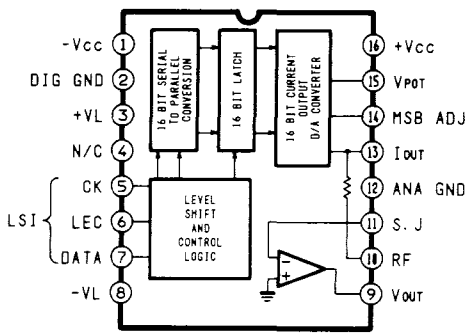


IC112: μPD4016-CX, CXK5816SP, CXK5816PN, CXK5816PS
or LC3517B-15
2048-Word x 8 bit Static RAM

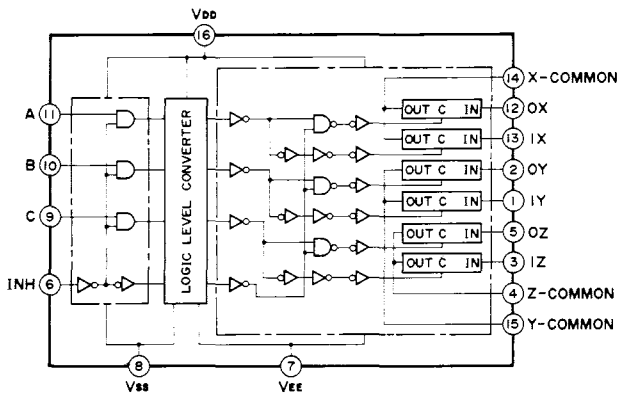




IC114: PCM56L
D/A Converter



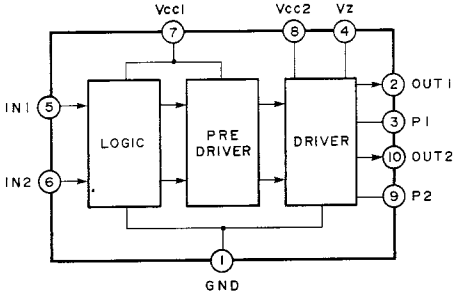
IC115: TC4053BP or μPD4053BC
Triple-2 channel Multiplexer/Demultiplexer



CONTROL INPUTS				"ON" CHANNEL
INHIBIT (Pin 6)	C (Pin 9)	B (Pin 10)	A (Pin 11)	0X (Pin 12), 0Y (Pin 2), 0Z (Pin 5) 1X (Pin 13), 1Y (Pin 1), 1Z (Pin 3)
L	L	L	L	0X, 0Y, 0Z
L	L	L	H	1X, 0Y, 0Z
L	L	H	L	0X, 1Y, 0Z
L	L	H	H	1X, 1Y, 0Z
L	H	L	L	0X, 0Y, 1Z
L	H	L	H	1X, 0Y, 1Z
L	H	H	L	0X, 1Y, 1Z
L	H	H	H	1X, 1Y, 1Z
H	*	*	*	NOTE

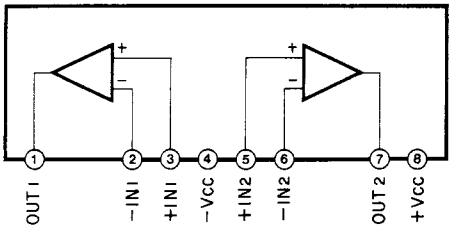
* Don't Care

IC120, 121: LB1645N
Motor Driver

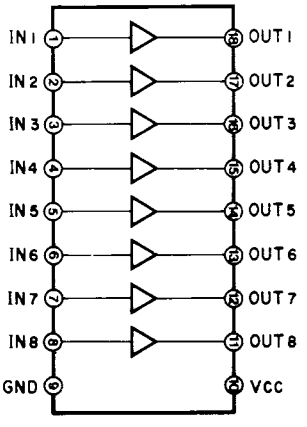


Input		Output		Function
IN1	IN2	OUT1	OUT2	
L	L	L	L	Brake
H	L	H	L	Forward
L	H	L	H	Reverse
H	H	L	L	Brake

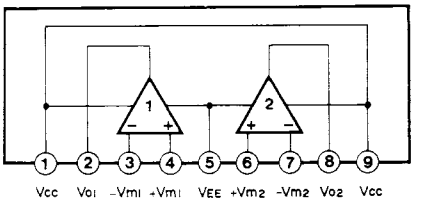
IC101: M5238L
IC122: M5218L
Dual Ope-amp.



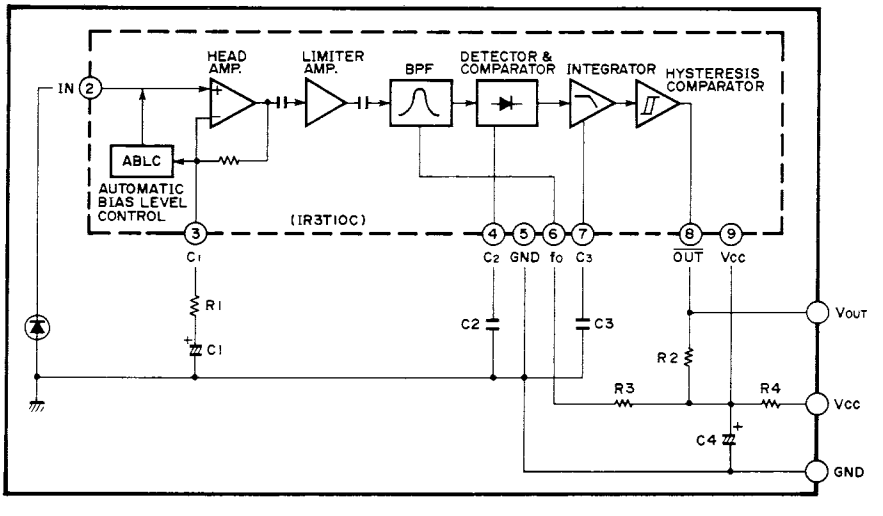
IC118, 119: M54564P
LED Driver

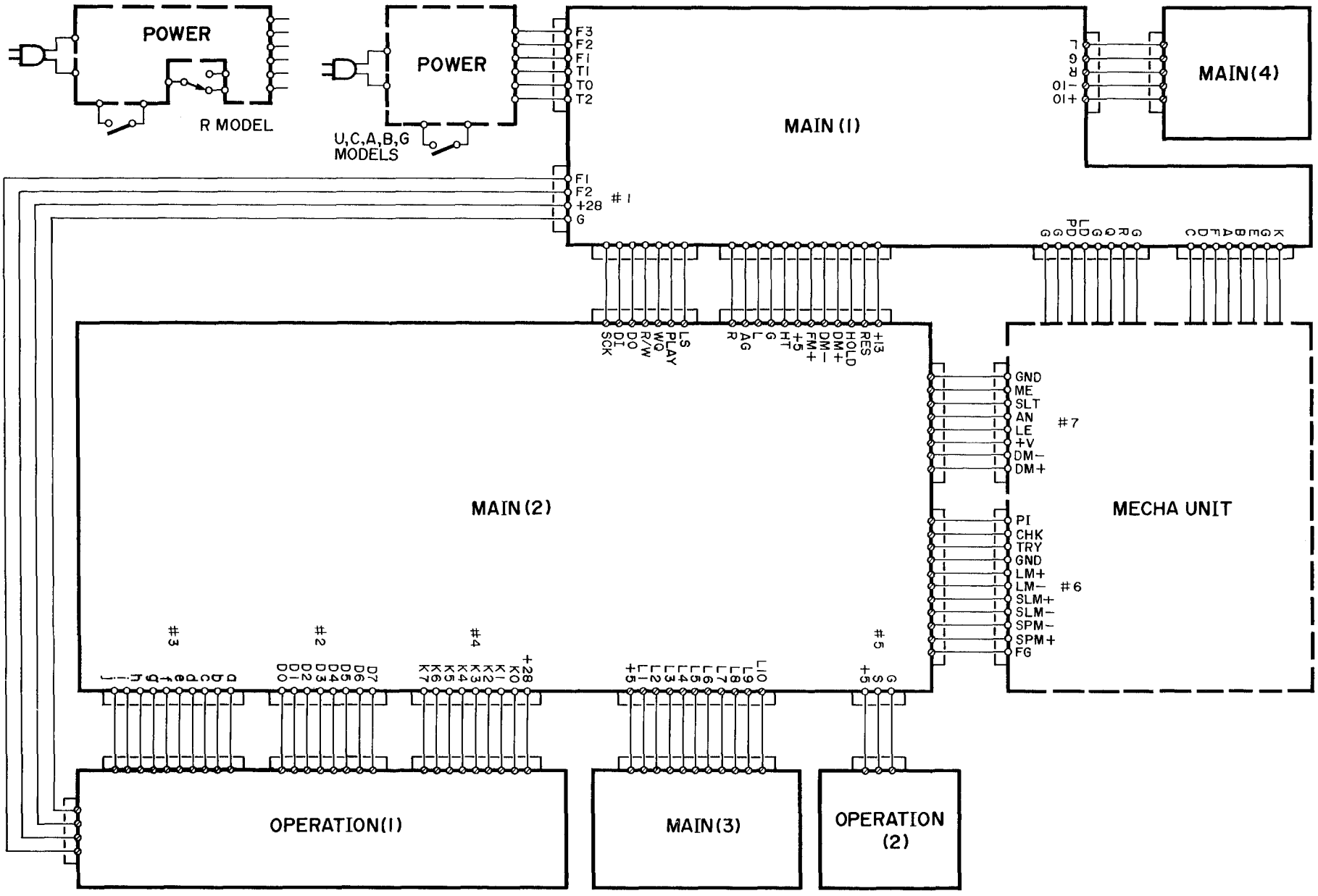


IC102, 104, 105: NJM2043S
IC103, 106 ~ 110: AN6551, NJM4558S,
TA75558S or BA715
Dual Ope-amp.



D401: GP1U501X
Remote Control Receiver Unit



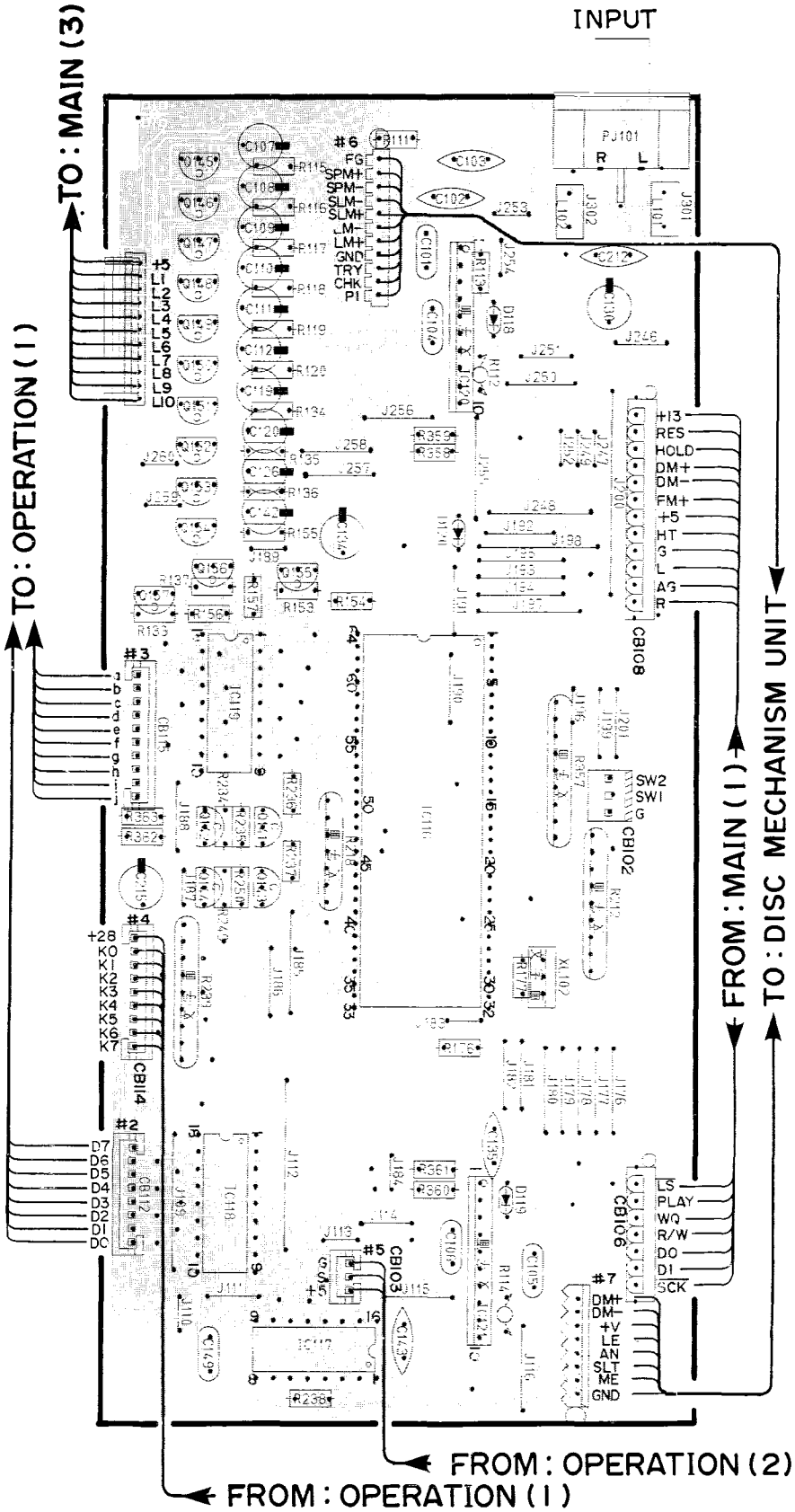


CDC-610/U/
CDC-35

■ PRINTED CIRCUIT BOARD (Pattern side)

Note) 文字面 : Component side

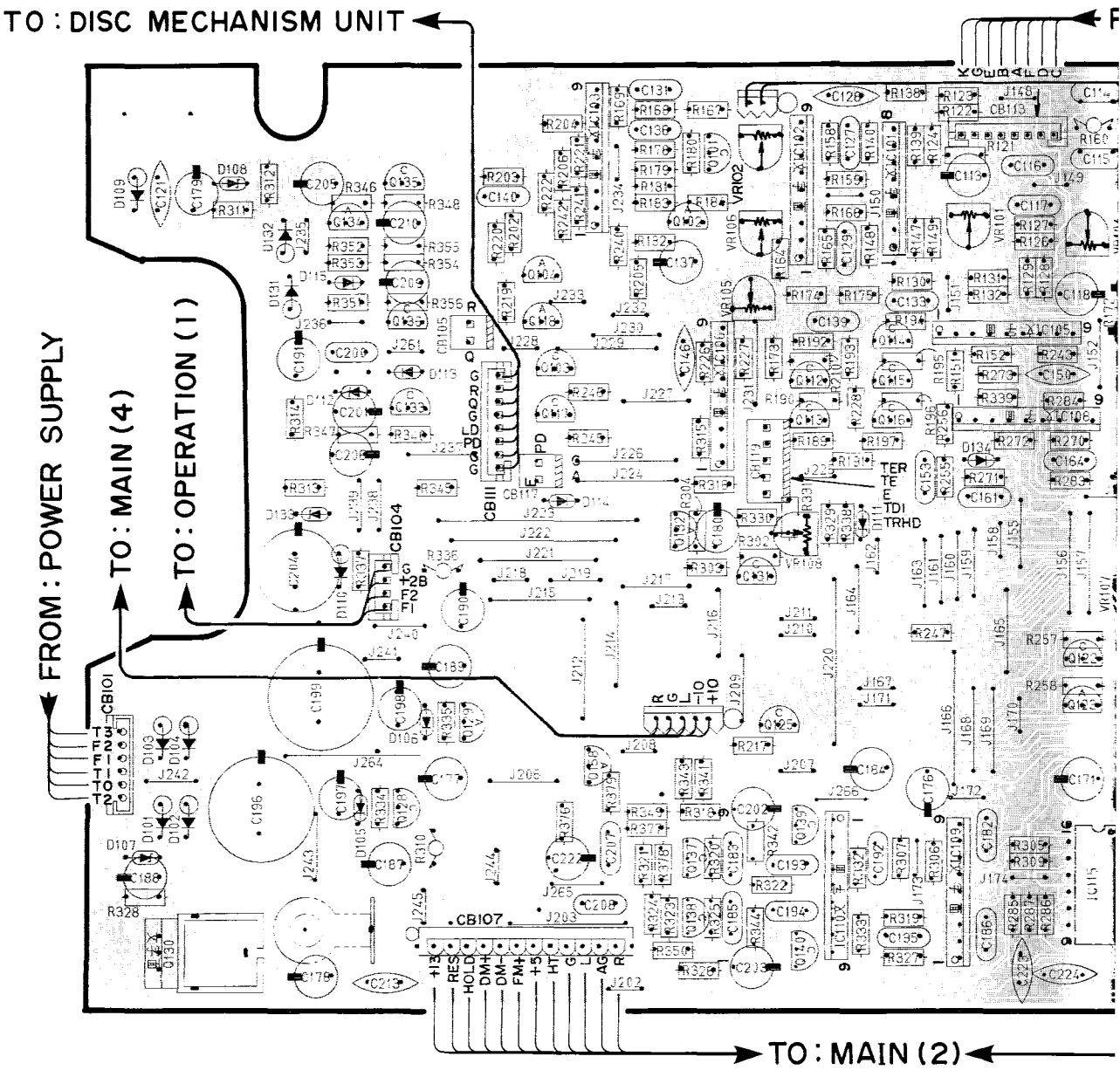
Main Circuit Board (2)



■ PRINTER CIRCUIT BOARD (Pattern side)

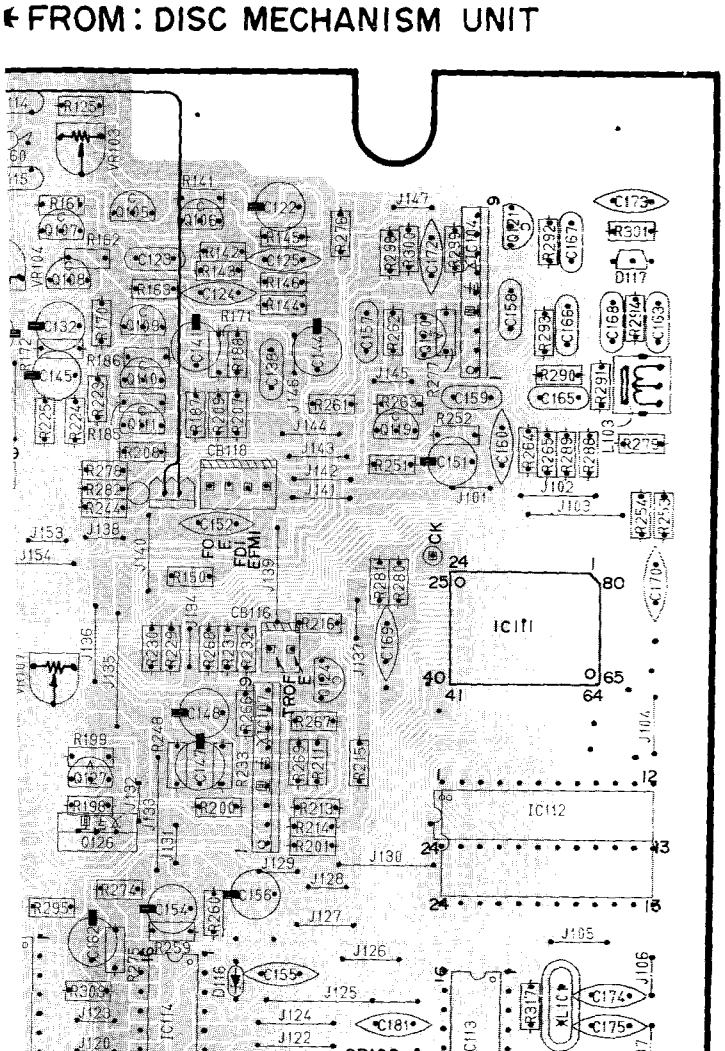
Note) 文字面 : Component side

Main Circuit Board (1)

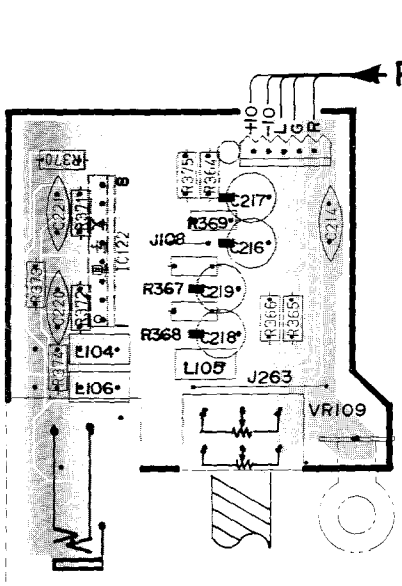


FROM : DISC MECHANISM UNIT

Main Circuit Board (4)

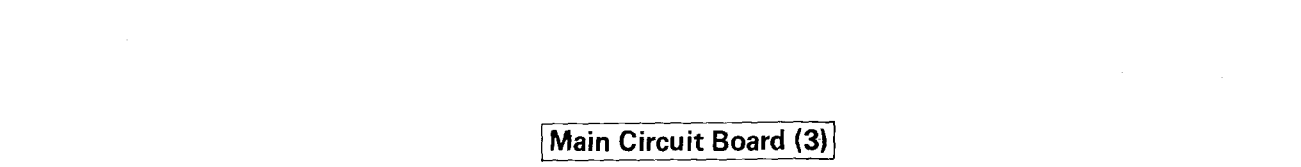


FROM : MAIN (1)



Main Circuit Board (3)

FROM : MAIN (2)

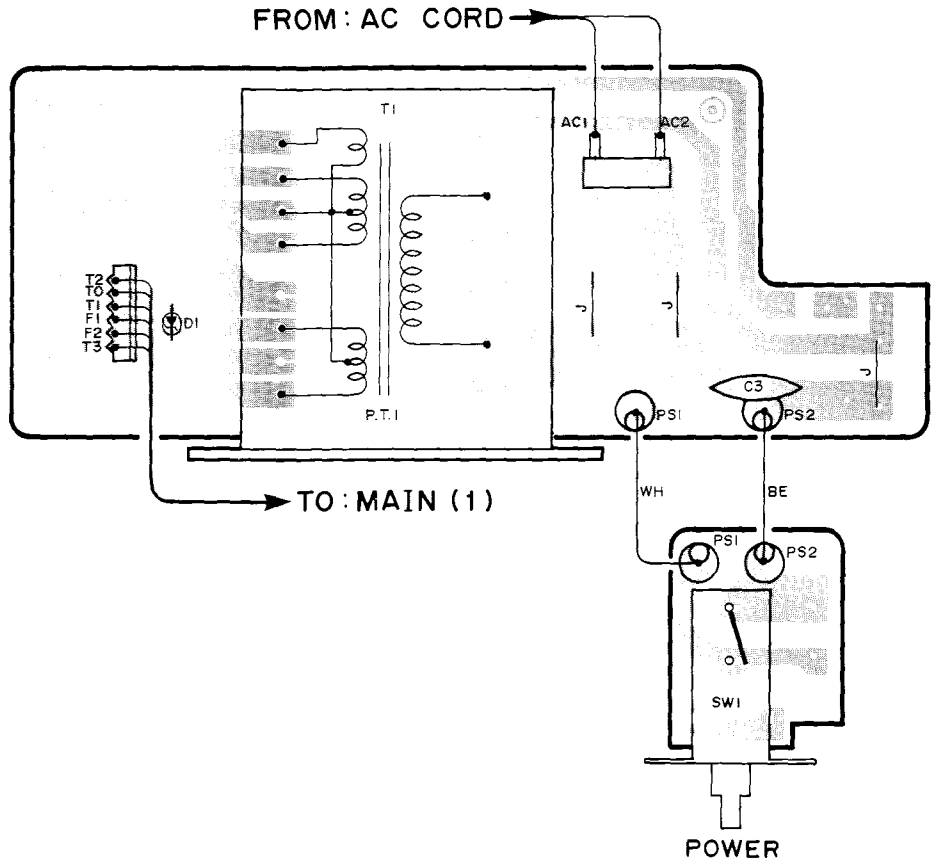


DISC IN 1 2 3 4 5 6 7 8 9 10

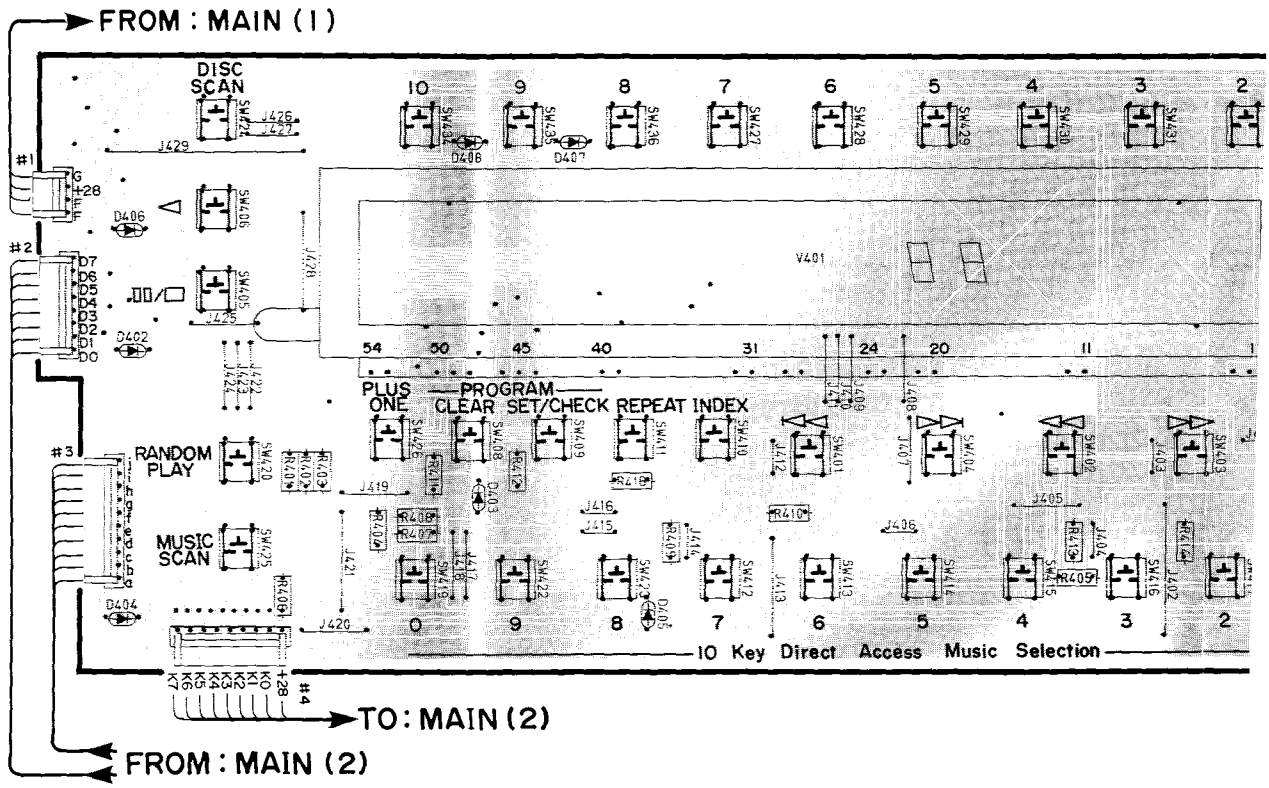
■ PRINTED CIRCUIT BOARD (Pattern side)

Power Supply Unit

- U, C, A, B, G models

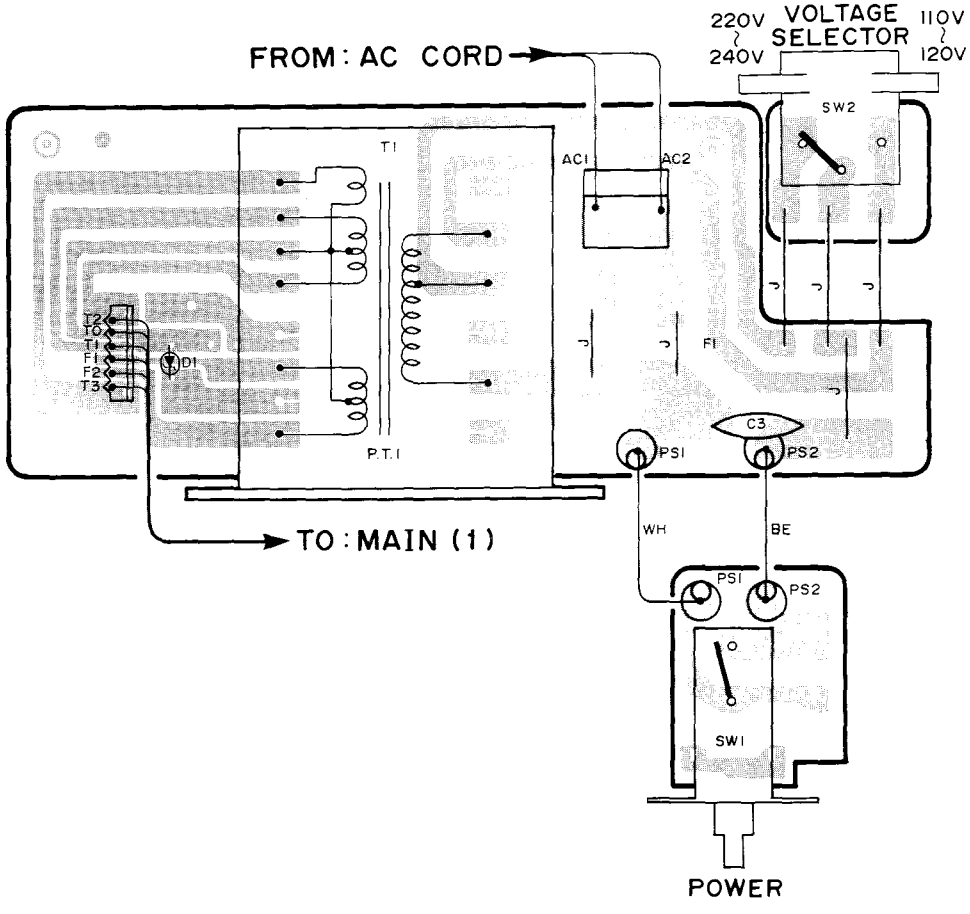


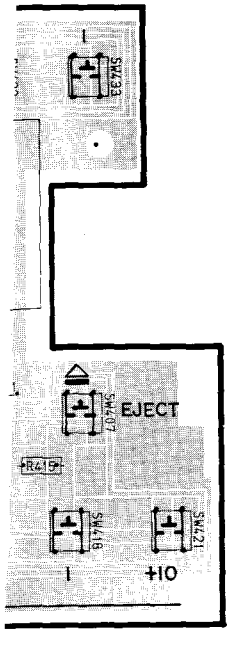
Operation Circuit Board (1)



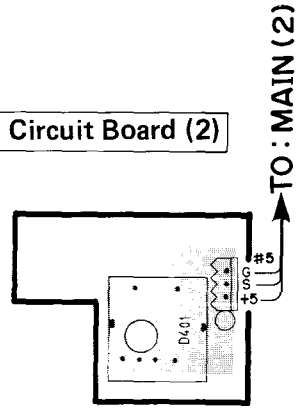
Power Supply Unit

- R model





Operation Circuit Board (2)



PARTS LIST

■ ELECTRICAL PARTS

■WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS list. For the parts No. of the carbon resistor, refer to P. 60.

Ref. No.	Part No.	Description			部品名	Remarks	Common Model	Markets	ランク
※	NA 09 92 10	Main Circuit Board			メインシート			U,C,R,A,B	
※	NA 09 92 20	〃			〃			G	
	FG 21 11 50	Ceramic Cap.	15pF	50V	セラコン	C150,220,221			
	FG 21 12 20	〃	22pF	50V	〃	C160			
	FG 21 12 70	〃	27pF	50V	〃	C146,174,175			
	FG 21 13 30	〃	33pF	50V	〃	C172			
	FG 21 14 70	〃	47pF	50V	〃	C152			
	FG 21 21 00	〃	100pF	50V	〃	C128			
	FG 21 24 70	〃	470pF	50V	〃	C124			
	FG 21 26 80	〃	680pF	50V	〃	C125			
	FG 21 31 00	〃	1000pF	50V	〃	C102,103,173			
	FG 41 32 20	〃	2200pF	50V	〃	C223,224			
	FG 24 41 00	〃	0.01μF	50V	〃	C121,135			
	FG 74 43 30	〃	0.033μF	50V	〃	C143,155			
	FZ 00 41 30	Semiconductive Ceramic Cap.	0.1μF	25V	半導体セラコン	C169,170,181,212~214			
	FA 15 31 00	Mylar Cap.	1000pF	50V	マイラーコン	C116,117,207,208			
	FA 15 31 30	〃	1300pF	50V	〃	C193,194			
	FA 15 32 20	〃	2200pF	50V	〃	C164			
	FA 15 33 90	〃	3900pF	50V	〃	C165			
	FA 15 36 80	〃	6800pF	50V	〃	C127			
	FA 15 41 00	〃	0.01μF	50V	〃	C104,106,149,168,200			
	FA 15 41 80	〃	0.018μF	50V	〃	C167,192,195			
	FA 15 42 20	〃	0.022μF	50V	〃	C153			
	FA 15 43 30	〃	0.033μF	50V	〃	C136			
	FA 15 44 70	〃	0.047μF	50V	〃	C161,163			
	FA 15 46 80	〃	0.068μF	50V	〃	C158			
	FA 15 47 50	〃	0.075μF	50V	〃	C183,185			
	FA 15 51 00	〃	0.1μF	50V	〃	C101,105,114,115,123,131			
	FA 15 51 20	〃	0.12μF	50V	〃	C129,138			
	FA 15 52 20	〃	0.22μF	50V	〃	C133			
	FA 15 52 40	〃	0.24μF	50V	〃	C166			
	FA 15 53 90	〃	0.39μF	50V	〃	C139,140			
	UJ 11 84 70	Electrolytic Cap.	470μF	6.3V	ケミコン	C144,156			
	UJ 42 73 30	〃	33μF	10V	〃	C180			
	UJ 12 81 00	〃	100μF	10V	〃	C113,122,137,148			
	UJ 42 83 30	〃	330μF	10V	〃	C201			
	UJ 13 71 00	〃	10μF	16V	〃	C178,187,189,206,209,218,219			
	UJ 13 72 20	〃	22μF	16V	〃	C107~112,119,120,126,142,151,222			
	UJ 13 73 30	〃	33μF	16V	〃	C210			
	UJ 13 74 70	〃	47μF	16V	〃	C132,202,203			
	UJ 13 81 00	〃	100μF	16V	〃	C154,162,176,184,188,216,217			
	UJ 14 82 20	〃	220μF	25V	〃	C177,190			
	UJ 13 82 20	〃	220μF	16V	〃	C197,198			
	UJ 14 64 70	〃	4.7μF	25V	〃	C147			
	UJ 14 71 00	〃	10μF	25V	〃	C130			
	UJ 14 72 20	〃	22μF	25V	〃	C191			
	UJ 15 73 30	〃	33μF	35V	〃	C215			
	UJ 14 74 70	〃	47μF	25V	〃	C179			
	UW 56 56 80	〃	0.68μF	50V	〃	C118			
	UJ 16 61 00	〃	1μF	50V	〃	C141,145,205			
	UH 16 54 70	〃	0.47μF	50V	〃	C157,159			
	UH 16 62 20	〃	2.2μF	50V	〃	C225			
	UJ 11 91 00	〃	1000μF	6.3V	〃	C134,171			

※New Parts（新規部品）NR

CDC-610/U/CDC-35

Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
	UJ 24 93 30	Electrolytic Cap.	3300μF 25V	ケミコン	C196,199			
	UJ 15 84 70	〃	470μF 35V	〃	C204			
	UT 45 26 80	Polypropylene Film Cap.	680pF 100V	ポリプロコン	C182,186			
	VD 47 37 00	Coil	60μH	コイル	L101,102,104～106			
	GE 90 20 00	OSC Coil	3.3μH	発振コイル	L103			
	HV 45 34 70	Flame Proof Carbon Resistor	4.7Ω 1/4W	不燃化カーボン抵抗	R310,336			⚠
	HV 45 36 80	〃	6.8Ω 1/4W	〃	R112,114			
	HV 45 41 00	〃	10Ω 1/4W	〃	R160			
	VF 45 91 00	Metal Film Resistor	2.2kΩ 1/4W	金属皮膜抵抗	R298,300			
	VF 45 92 00	〃	22kΩ	〃	R288,291			
※	VC 02 81 00	Resistor Array	10kΩ×8	抵抗アレイ	R239			
	VE 47 84 00	〃	47kΩ×6	〃	R218			
	VF 06 66 00	〃	47kΩ×8	〃	R212,357			
	VB 86 14 00	Pre-Set Potentiometer	B4.7kΩ	半固定抵抗	VR103			
	VB 86 15 00	〃	B10kΩ	〃	VR105,108			
	VB 86 18 00	〃	B47kΩ	〃	VR104			
	VB 86 19 00	〃	B100kΩ	〃	VR101,106			
※	VC 61 27 00	〃	B680kΩ	〃	VR107			
	VC 61 26 00	〃	B150kΩ	〃	VR102			
※	VF 34 75 00	Potentiometer	50kA	ロータリーボリューム	VR109			
	iA 09 33 70	Transistor	2SA933S(Q,R)	トランジスタ	Q102,120,134,158			
	iA 11 15 10	〃	2SA1115(E,F)	〃	〃	Inter-changeable		
	iX 60 31 70	〃	2SA1310(R,S,T)	〃	〃			
	iA 09 34 00	〃	2SA934	〃	Q104,118,123,127,129,132			⚠
	iB 05 44 10	〃	2SB544	〃	〃	Inter-changeable		⚠
	VC 46 67 00	〃	2SA1534A(R,S)	〃	〃			⚠
	VC 46 67 00	〃	2SA1534A(R,S)	〃	Q142,144			
	iC 05 35 40	〃	2SC535(A,B,C)	〃	Q105,107			
	VB 17 04 00	〃	2SC1923(R,O,Y)	〃	〃	Inter-changeable		
	VC 50 21 00	〃	2SD1915	〃	Q133			
	iC 17 40 70	〃	2SC1740S(S,R)	〃	Q101,106,108～113,119,121,124,125,135,136,141,143,145～157			
	iC 26 03 10	〃	2SC2603(E,F)	〃	〃	Inter-changeable		
	iX 60 31 80	〃	2SC3312(R,S,T)	〃	〃			
	iA 10 15 21	〃	2SA1015(Y)	〃	Q131			
	iC 20 60 00	〃	2SC2060	〃	Q103,117,122,128			⚠
	iD 04 00 00	〃	2SD400	〃	〃	Inter-changeable		⚠
	VC 40 79 00	〃	2SD1913(R,S)	〃	Q126			
	iX 60 42 00	〃	2SC2878(A,B)	〃	Q114～116,137～140			
	VC 50 21 00	〃	2SD1915	〃	〃	Inter-changeable		
	iD 08 80 00	〃	2SD880(O,Y)	〃	Q130			⚠
	iD 15 05 00	〃	2SD1505	〃	〃	Inter-changeable		⚠
	iF 00 34 50	Diode	1SS133	ダイオード	D112～115,120,134			⚠
	iH 00 14 30	〃	1SR35-100A	〃	D101～104,109,110,131,132			⚠
	iF 00 49 10	FM Varactor Diode	1SV55	FMバラクタダイオード	D117			
	iF 00 49 20	〃	SVC211	〃	〃	Inter-changeable		
	iF 00 62 90	Zener Diode	MTZ5.6B	ツェナーダイオード	D107			
	iF 00 88 00	〃	MTZ3.6A	〃	D111			
	iF 01 09 00	〃	MTZ10C	〃	D105,106,133			

※New Parts（新規部品）NR

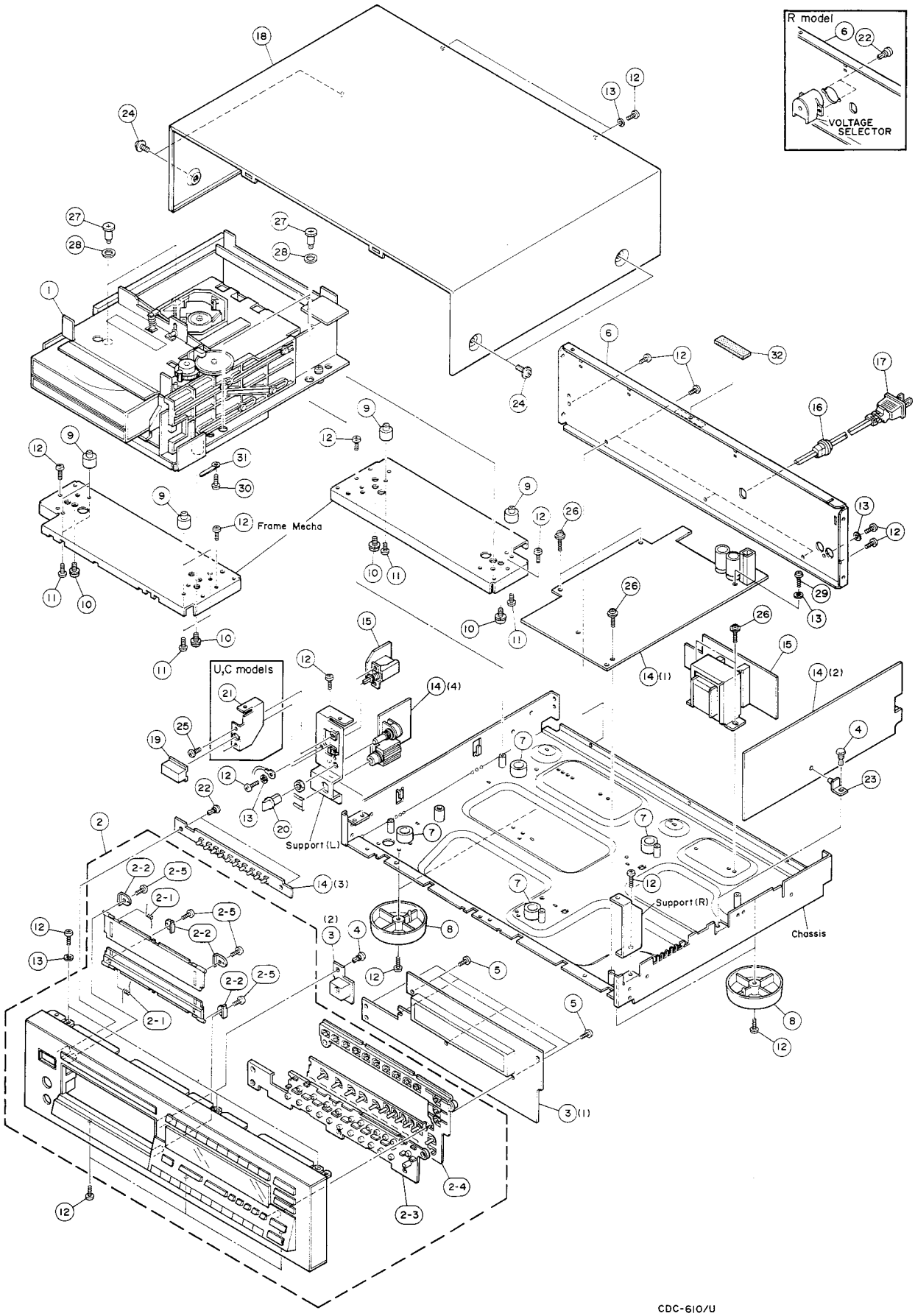
	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
		iF 01 06 80	Zener Diode	MTZ5.1A	ツェナーダイオード	D116			
		iF 01 06 90	//	MTZ5.1B	//	D118			
		iF 01 07 40	//	MTZ6.2B	//	D119			
		iF 00 89 10	//	MTZ6.8B	//	D108			
		iF 00 42 70	LED(Red)	SLR-55URC3H	L E D	D121～130			
		iG 03 47 00	IC	AN6551	I C	IC103,106～110 } Inter-changeable			
		iG 07 68 00	//	NJM4558S	//	// } Inter-changeable			
		iG 13 22 00	//	BA715	//	// } Inter-changeable			
		iG 05 51 00	//	TC4053BP	//	IC115 } Inter-changeable			
		iG 10 59 00	//	μPD4053BC	//	// } Inter-changeable			
		iG 05 82 10	//	M5218L	//	IC122			
		XB 24 80 01	//	M5238L	//	IC101			
		iG 08 02 00	//	NJM2043S	//	IC102,104,105			
		XC 25 00 01	//	M54564P	//	IC118,119			
※		XE 60 30 01	//	LU59522	//	IC117			
		iG 11 92 00	//	μPD4016-CX	//	IC112			
※		XE 60 40 01	//	M50747-136SP	//	IC116			
		XD 89 80 01	//	PCM56L	//	IC114			
		XB 04 40 01	//	LB1645N	//	IC120,121			
		XB 69 80 01	//	YM3616	//	IC111			
※		XB 70 10 01	//	YM3404	//	IC113			
		VE 22 24 00	Ceramic Oscillator	8MHz	セラミック発振子	XL102			
		VC 39 87 00	Quartz Crystal Unit	17.28MHz	水晶振動子	XL101			
		VF 09 65 00	Pin Jack	2P	ピンジャック	PJ101			
※		VF 92 22 00	Phone Jack		ホーンジャック	JK101			
		LB 92 50 60	Short Plug	6P i-Type	i型ショートプラグ	CB101			
		VD 00 46 00	Base Pin	3P i-Type	P H ベースピン	CB103			
		VD 00 47 00	//	4P i-Type	//	CB104			
		VD 00 51 00	//	8P i-Type	//	CB111～113			
		VD 00 52 00	//	9P i-Type	//	CB114			
		VD 00 53 00	//	10P i-Type	//	CB115			
		LB 20 13 90	//	2P i-Type	N H ベースピン	CB105,116,117			
		LB 30 07 30	//	3P i-Type	//	CB102			
		LB 40 05 70	//	4P i-Type	//	CB118			
		LB 50 02 50	//	5P i-Type	//	CB119			
		VA 72 57 00	Wire Holder	7P	パラレルホルダー	CB106,109			
		VA 72 62 00	//	12P	//	CB107,108			
		LA 00 41 20	Test Point Pin	1P	テストポイントピン				
※		VA 11 91 00	Heat Sink	PH-0125-G	放熱板				
		BA 08 40 00	//		//				
		Ei 33 00 86	Binding Head Tapping Screw	3×8 FCRM3-BI	バインドタッピングネジ	PACK			
		BB 06 62 90	Ground Washer		アースワッシャー				

※New Parts（新規部品）NR

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク	
※		***NA 09 91 90***	***Operation Circuit Board***		オペレーションシート					
		KA 90 63 80	Switch		ライトタッチスイッチ	SW401～436				
		iF 00 34 50	Diode	1SS133	ダイオード	D402～408				
※		VF 92 65 00	Receiver Unit	GP1U501X	受光ユニット	D401				
※		VF 34 76 00	Display Unit	8-MT-35GK	蛍光表示管	V401				
※		VE 82 88 00	Sheet		シートダブルフェース					
※		***NA 09 93 50***	***Power Supply Unit***		電源ユニット			U,C		
※		***NA 09 93 60***	〃		〃			R		
※		***NA 09 93 70***	〃		〃			A,B,G		
		VC 40 97 00	Power Switch		電源スイッチ	SW1				⚠
		LA 00 58 10	Voltage Selector		電圧切換器	SW2		R		⚠
		Fi 50 41 00	Ceramic Cap.	0.01μF	セラコン	C3		U,C,R		⚠
※		VG 77 05 00	〃	4700pF	〃	〃		A,B,G		⚠
※		***NX 60 27 10***	***Pitch Relay P.C. Board Ass'y***		ピッチリレーシートAss'y	141-4-290T-49401				
※		LX 60 13 50	Socket		ソケット	4-267T-56178				
※		LX 60 13 60	〃		〃	4-267T-59100				
※		LX 60 13 70	〃		〃	4-267T-59200				
※		***NX 60 27 30***	***Sensor P.C. Board Ass'y***		センサーシートAss'y	141-4-290T-49500				
※		iX 61 23 90	Photo Interrupter		フォトインタラプター	4-202T-52400				
※		***NX 60 27 40***	***Front Relay P.C. Board Ass'y***		フロントリレーシートAss'y	141-4-290T-49600				
※		LX 60 13 80	Plug	8P	プラグ	4-236T-27378				
※		***NX 60 27 50***	***Rear Relay P.C. Board Ass'y***		リアリレーシートAss'y	141-4-290T-49700				
※		LX 60 13 90	Plug	11P	プラグ	4-236T-29381				

※New Parts（新規部品）NR

■ EXPLODED VIEW



CDC-610/U
CDC-35

■ MECHANISM PARTS

Note) φ : Diameter

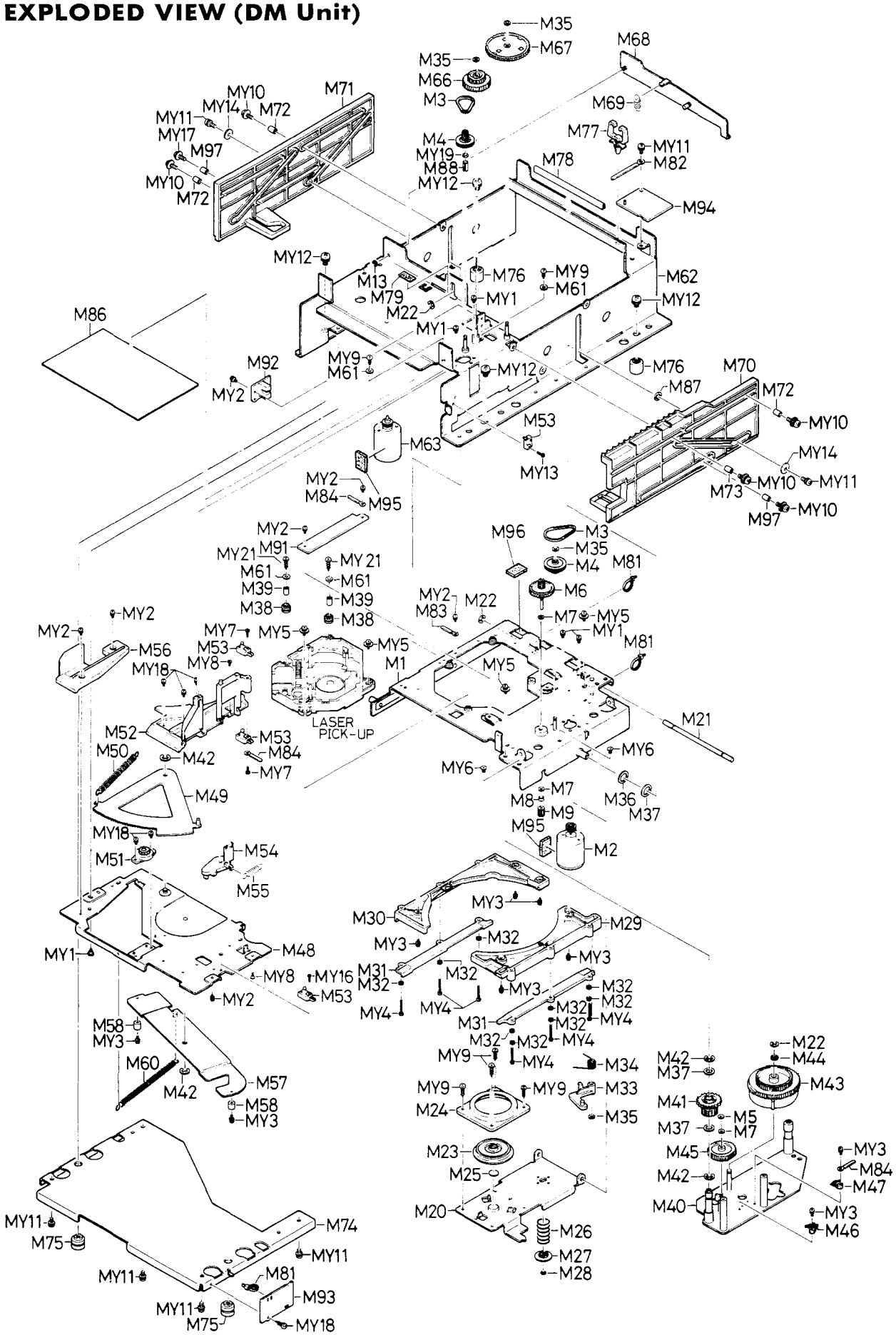
	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
※	1	VF 18 53 00	Disc Mechanism Unit		ディスクメカユニット				
※	2	VF 48 89 00	Front Panel Ass'y		フロントパネル Ass'y	CDC-610			
※	//	VF 48 90 00	//		//	CDC-610U			
※	//	VF 49 26 00	//		//	CDC-35			
※	2-1	VE 96 95 00	Spring, Lid		スプリングリッド				
※	2-2	VE 97 00 00	Support, Lid		サポートリッド				
※	2-3	VE 97 45 00	Sub Chassis		サブシャーシ				
※	2-4	VE 97 41 00	Actueter		アクチュエータ				
	2-5	Ei 03 00 66	Binding Head Tapping Screw	3×6 ZMC2-Y	バインドタッピングネジ	PACK			
※	3	NA 09 91 90	Operation Circuit Board		オペレーションシート				
	4	CB 60 56 20	Prastic Rivet		プラスチックリベット				
	5	Ei 03 00 66	Binding Head Tapping Screw	3×6 ZMC2-Y	バインドタッピングネジ	PACK			
※	6	VE 97 05 00	Rear Panel		リアパネル	CDC-610		R	
※	//	VE 97 06 00	//		//	CDC-610U		U	
※	//	VF 00 56 00	//		//	CDC-610U		C	
※	//	VE 97 07 00	//		//	CDC-610		G	
※	//	VE 97 08 00	//		//	CDC-610		A,B	
※	//	VF 47 77 00	//		//	CDC-35		R	
※	//	VF 47 78 00	//		//	//		U	
※	//	VF 47 79 00	//		//	//		C	
※	//	VF 47 80 00	//		//	//		G	
※	//	VF 47 81 00	//		//	//		A,B	
※	7	VE 97 40 00	Ring Rubber		リングラバー				
	8	VE 55 69 00	Leg		脚		CD-M555		
※	9	VF 18 57 00	Isolatter		アイソレータ				
※	10	EL 00 02 90	Pan Head Sems Screw	5×8 ZMC2-Y	セムスナベ小ネジ				
	11	ED 03 00 86	Binding Head Screw	3×8 ZMC2-Y	バインド小ネジ	PACK			
	12	Ei 33 00 86	Binding Head Tapping Screw	3×8 FCRM3-BI	バインドタッピングネジ	PACK			
	13	EV 41 30 36	Toohted Lock Washer	φ3 FCRM3-BI	歯付座金	PACK			
※	14	NA 09 92 10	Main Circuit Board		メインシート			U,C,R,A,B	
※	//	NA 09 92 20	//		//			G	
※	15	NA 09 93 50	Power Supply Unit		電源ユニット			U,C	
※	//	NA 09 93 60	//		//			R	
※	//	NA 09 93 70	//		//			A,B,G	
	16	CB 62 01 90	Cord Stopper	CM-22B	コードストッパー			R,A,B,G	
	//	CB 62 02 00	//	CM-22C	//			U,C	
	17	MG 00 22 20	Power Cord	10A 250V 1.98m	電源コード			U,C	⚠
	//	VE 22 29 00	//		//			R	⚠
	//	VE 04 29 00	//		//			A	⚠
	//	VE 04 31 00	//		//			B	⚠
	//	VE 04 34 00	//		//			G	⚠
※	18	VF 73 32 00	Top Cover		トップカバー				
	19	CB 66 08 10	Button, Power		ボタン	CDC-610/U			
	//	VE 46 81 00	//		//	CDC-35			
	20	CB 61 37 20	Knob		ツマミ	PHONSE LEVEL			
※	21	VF 88 38 00	Shield Plate		シールドプレート			U,C	
	22	CB 60 92 60	Plastic Rivet		プラスチックリベット				
	23	CB 09 12 90	Holder, PCB		基板ホルダー				
	24	EK 36 50 40	BW Head Screw	4×8 FCM3-BI	BWヘッド小ネジ				
	25	ED 33 00 66	Binding Head Screw	3×6 FCRM3-BI	バインド小ネジ	PACK			
	26	EK 33 60 20	BW Head Tapping Screw	3×6 FCM3-BI	BWヘッドタッピングネジ				
※	27	VF 18 54 00	Special Screw		段付ネジ				
※	28	VF 18 59 00	Washer		ワッシャー				

※New Parts (新規部品) NR

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
	29	Ei 33 00 66	Binding Head Tapping Screw	3×6 FCRM3-BI	バインドタッピングネジ	PACK			
	30	ED 03 00 56	Binding Head Screw	3×5 ZMC2-Y	バインド小ネジ	PACK			
	31	VD 39 92 00	Wire Stopper		束線止メ				
※	32	VG 72 74 00	Damper		ダンパー				
		CB 06 92 51	Binding Tie	BK-1	インシュロックタイ	PACK			
			Accessories		付属品				
※		VF 31 70 00	Remote Control transmitter	RS-CDC6	リモートコントロールトランスミッター				
※		VF 47 82 00	CD Magazine	YCM-10	CDマガジン				
		VC 16 76 00	Pin-Pin Cord	0.8m	ピンピンコード				
			Dry Cell	AA,R6	単3乾電池				

※New Parts（新規部品）NR

■ EXPLODED VIEW (DM Unit)



■ MECHANISM PARTS (DM Unit)

Note) ϕ : Diameter

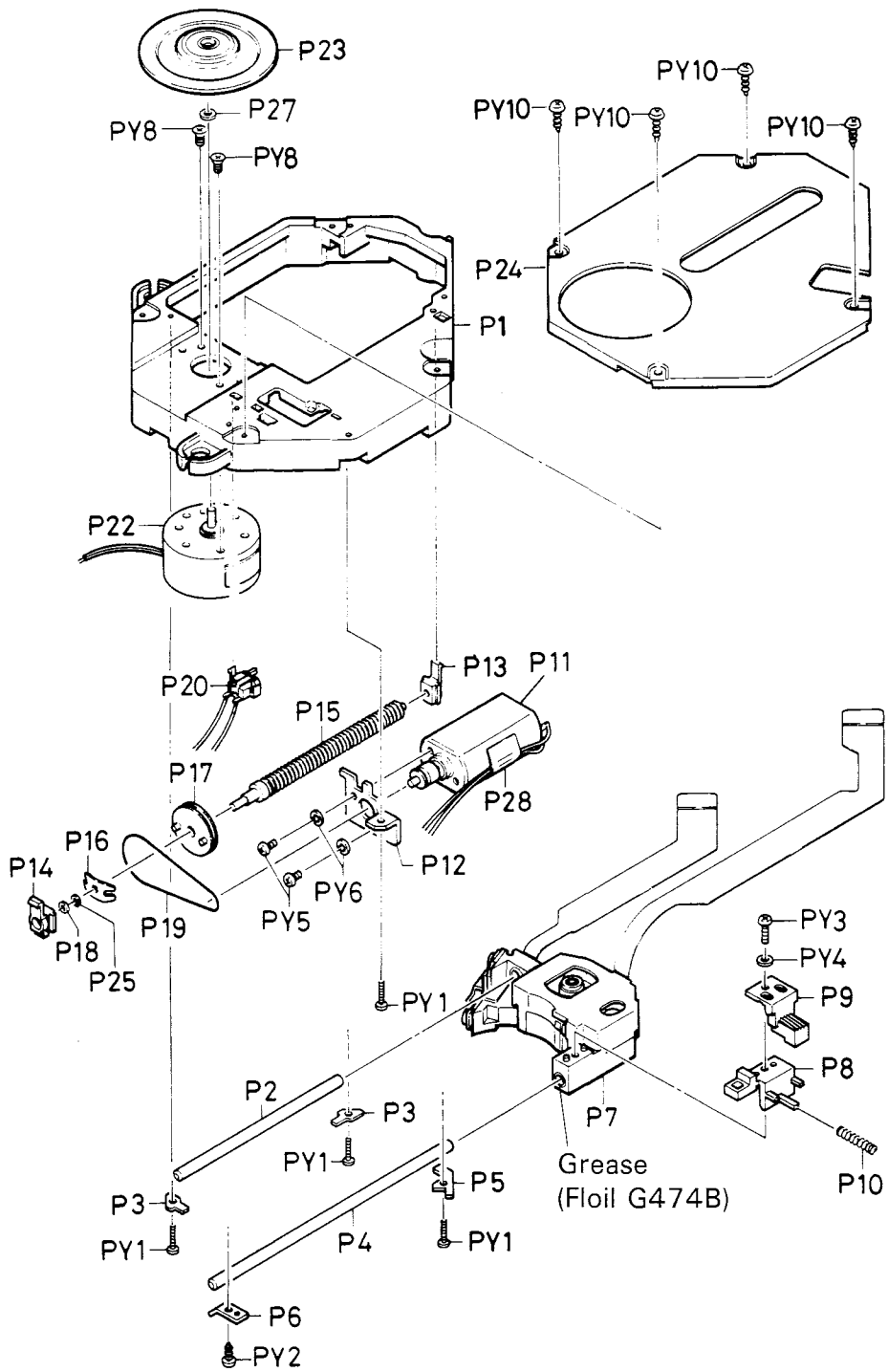
	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
※		***VF 18 53 00***	***Disc Mechanism Unit***		ディスクメカ				
※	M1	NX 60 26 60	Chassis Ass'y		シャーシ Ass'y	141-0-311T-56501			
※	M2	JX 60 02 30	Commutate Motor Ass'y		コミュテートモータAss'y	4-527T-34102			
※	M3	CX 60 46 50	Square Belt		スケアベルト	141-2-564T-45001			
※	M4	CX 60 46 60	Pulley		プーリ	141-2-661T-52500			
※	M5	AX 60 35 10	Special Washer	1.7×4.5×0.15T	特殊ワッシャ	412-014-3005			
※	M6	NX 60 26 70	Gear Ass'y, Metal		ギヤ Ass'y	141-0-581T-54200			
※	M7	AX 60 35 20	Special Washer	2.1×4.5×0.25T	特殊ワッシャ	412-012-7005			
※	M8	BX 60 10 40	Pipe, Pinion Spacer	3×4×3.5	パイプ	141-2-461T-45203			
※	M9	CX 60 46 70	Gear, Pinion		ギヤ	141-2-581T-38602A			
※	M13	AX 60 38 60	Special Washer, E Ring	2mm	特殊ワッシャ(Eリング)	412-014-6402			
※	M20	CX 60 46 80	Lever, Chuck		レバー	141-2-740T-62901			
※	M21	AX 60 35 30	Shaft, Lever		シャフト	141-2-755T-03300			
※	M22	AX 60 38 70	Special Washer, E Ring	3mm	特殊ワッシャ(Eリング)	412-014-6501			
※	M23	CX 60 46 90	Pulley, Chuck		プーリ	141-2-661T-53800			
※	M24	AX 60 35 40	Bracket, Pulley		ブラケット	141-2-210T-85900			
※	M25	CX 60 47 00	Sheet, Pulley		シート	141-2-247T-86000			
※	M26	AX 60 36 10	Spring Coil, Lever		スプリングコイル	141-2-856T-79400			
※	M27	CX 60 47 10	Pulley, Spring Coil		プーリ	141-2-661T-36750E			
※	M28	AX 60 35 50	Special Washer, E Ring	1.2mm	スペシャルワッシャ	141-2-457T-23700			
※	M29	AX 60 35 60	Bracket, Tray Guide(R)		ブラケット	141-2-210T-86100B			
※	M30	AX 60 35 70	// (L)		//	141-2-210T-86000C			
※	M31	AX 60 35 80	Bracket, Tray Guide		//	141-2-210T-86200D			
※	M32	CX 60 52 10	Washer SPR	2×4×6	スプリングワッシャ	411-086-1803			
※	M33	CX 60 47 20	Lever, Tray Lock		レバー	141-2-740T-63000			
※	M34	AX 60 35 90	Spring Wire, Lever		スプリングワッシャ	141-2-860T-21400			
※	M35	CX 60 50 90	Washer	2.6×6×0.5T	特殊ワッシャ	412-022-6500			
※	M36	CX 60 51 00	//	7.2×11×0.25T	//	141-2-453T-30900			
※	M37	CX 60 51 10	Special Washer		//	412-012-9009			
※	M38	CX 60 47 30	Rubber Cushion, Pick-Up		ラバークッション	141-2-445T-34100			
※	M39	AX 60 38 80	Pipe	2.65×3.65×4.5	パイプ	141-2-461T-42801			
※	M40	AX 60 36 00	Sub Chassis Ass'y		サブシャーシ Ass'y	141-0-312T-20001			
※	M41	CX 60 47 40	Gear, Tray Drawer		ギヤ	141-2-581T-53600B			
※	M42	AX 60 38 90	Special Washer, E Ring	4mm	スペシャルワッシャ	141-2-457T-23200			
※	M43	CX 60 47 50	Gear, Cam		ギヤ	141-2-581T-53700D			
※	M44	CX 60 51 20	Special Washer	4×8×0.25T	特殊ワッシャ	412-012-9900			
※	M45	CX 60 47 60	Gear, Relay		ギヤ	141-2-581T-54300A			
※	M46	KX 60 13 10	Switch, Tray Receive		スイッチ	4-248T-36300			
※	M47	KX 60 13 20	Switch, Chucking		//	4-248T-38000			
※	M48	AX 60 37 00	Sub Chassis Ass'y		サブシャーシ Ass'y	141-0-312T-19900			
※	M49	AX 60 36 20	Lever Ass'y		レバー Ass'y	141-0-740T-62700			
※	M50	AX 60 36 80	Spring Coil, Lever		スプリングコイル	141-2-856T-79600A			
※	M51	CX 60 47 70	Gear, Dumper		ギヤ	141-2-581T-47500			
※	M52	AX 60 36 90	Bracket		ブラケット	141-2-210T-86400E			
※	M53	KX 60 13 30	Switch		スイッチ	4-238T-72100			
※	M54	AX 60 36 30	Lever, Cartridge Lock		レバー	141-2-740T-63100C			
※	M55	AX 60 36 40	Spring Coil, Lock Lever		スプリングコイル	141-2-856T-79500A			
※	M56	AX 60 36 50	Bracket		ブラケット	141-2-210T-86300B			
※	M57	AX 60 36 60	Lever, Sub Chassis		レバー	141-2-740T-63200A			
※	M58	BX 60 10 50	Shaft, Lever Operation		シャフト	141-2-755T-03900			
※	M60	AX 60 36 70	Spring Coil, Lever		スプリングコイル	141-2-856T-82900			
※	M61	CX 60 51 30	Washer V	2×6×0.4	ワッシャ(V)	411-087-4704			
※	M62	NX 60 26 80	Chassis Ass'y, Main		シャーシ Ass'y	141-0-311T-56400			

※New Parts (新規部品) NR

	Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
※	M63	JX 60 02 40	Commutate Motor Ass'y	コミュテートモータAss'y	4-527T-34101			
※	M66	CX 60 47 80	Gear	ギヤ	141-2-581T-54400			
※	M67	CX 60 47 90	Gear, Slide Drive	〃	141-2-581T-54500A			
※	M68	NX 60 26 90	Lever Ass'y	レバー Ass'y	141-0-740T-62800			
※	M69	AX 60 37 10	Spring Coil	スプリングコイル	141-2-856T-79300			
※	M70	CX 60 48 00	Slide, Loading Drive(R)	スライド	141-2-732T-53800B			
※	M71	CX 60 48 10	〃 (L)	〃	141-2-732T-53700A			
※	M72	BX 60 10 60	Boss, Guide	ボス	141-2-462T-93300A			
※	M73	BX 60 10 70	〃	〃	141-2-462T-93301B			
※	M74	AX 60 37 20	Bracket	ブラケット	141-2-290T-30101A			
※	M75	AX 60 37 30	Shaft, For Shipping	シャフト	141-2-755T-04701B			
※	M76	AX 60 37 40	〃	〃	141-2-755T-03201A			
※	M77	CX 60 48 20	Fixer, Lead Retainer	フィクサー	141-2-464T-24000			
※	M78	CX 60 48 30	Cushion	15×85mm	クッション	141-2-447T-12701		
※	M79	CX 60 48 40	Sheet	シート	141-2-247T-82600			
※	M81	CX 60 48 50	Fixer, Leed Retainer	フィクサー	141-2-464T-40200			
※	M82	CX 60 48 60	Lug, Leed Retainer	ラグ	141-2-472T-12600			
※	M83	CX 60 48 70	〃	〃	141-2-472T-01001			
※	M84	CX 60 48 80	〃	〃	141-2-472T-02201			
※	M86	CX 60 48 90	Sheet	120×75mm	シート	141-2-247T-88900		
※	M87	CX 60 51 40	Special Washer	7.2×11×0.13	特殊ワッシャ	412-012-9306		
※	M88	BX 60 10 80	Pipe	3×4×2.5	パイプ	141-2-461T-25707		
※	M91	NX 60 27 10	Pitch Relay P.C. Board Ass'y		ピッチリレーシートAss'y	141-4-290T-49401		
※	M92	NX 60 27 30	Sensor P.C. Board Ass'y		センサーシートAss'y	141-4-290T-49500		
※	M93	NX 60 27 40	Front Reray P.C. Board Ass'y		フロントリレーシートAss'y	141-4-290T-49600		
※	M94	NX 60 27 50	Rear Reray P.C. Board Ass'y		リアリレーシートAss'y	141-4-290T-49700		
※	M95	CX 60 52 80	Cushion	10×15	クッション	141-2-447T-03400		
※	M96	CX 60 52 90	〃	15×25×3T	〃	141-2-447T-46200		
※	M97	BX 60 11 10	Pipe	D3×D4×6H	パイプ	141-2-461T-25708		
※	MY1	AX 60 39 00	SCR PAN +SW	2.6×4	バネ座付ナベ小ネジ	411-045-1004		
※	MY2	AX 60 39 10	〃	2×4	〃	411-044-7205		
※	MY3	AX 60 39 20	〃	2×6	〃	411-044-7700		
※	MY4	AX 60 39 30	SCR PAN	2×16	ナベ小ネジ	411-002-4703		
※	MY5	AX 60 39 40	SCR PAN +SW+W	2.6×6	バネ+平座付ナベ小ネジ	411-036-2805		
※	MY6	AX 60 39 50	SCR FLT	2.6×6	皿小ネジ	411-033-9906		
※	MY7	AX 60 39 60	SCR TPG PAN PCS	1.7×8	ナベタッピングネジ	411-030-2801		
※	MY8	AX 60 39 70	SCR FLT	2×4	皿小ネジ	411-033-2907		
※	MY9	AX 60 39 80	SCR S -TPG PAN	2×6	ナベ小ネジ	411-022-7807		
※	MY10	AX 60 39 90	SCR PAN +SW+W	3×10	バネ+平座付ナベ小ネジ	411-036-3208		
※	MY11	AX 60 40 00	SCR PAN +SW	3×6	バネ座付ナベ小ネジ	411-003-8908		
※	MY12	AX 60 40 10	〃	5×6	〃	411-046-4004		
※	MY13	AX 60 40 20	SCR PAN PCS	1.7×6	ナベ小ネジ	411-020-2101		
※	MY14	CX 60 51 50	Washer Z	3×10×1	ワッシャ(Z)	411-092-2900		
※	MY16	AX 60 40 30	SCR PAN PCS	1.7×6.5	ナベ小ネジ	411-105-5201		
※	MY17	AX 60 40 40	SCR PAN +FLG	3×8	フレンジ付ナベ小ネジ	411-049-0003		
※	MY18	AX 60 40 50	SCR S -TPG PAN	2×4	ナベ小ネジ	411-022-7500		
※	MY19	CX 60 51 60	Special Washer	3.1×5.4×0.5	特殊ワッシャ	412-012-7708		
※	MY21	AX 60 40 70	SCR PAN +SW	2×10	バネ座付ナベ小ネジ	411-044-6703		

※New Parts (新規部品) NR

■ EXPLODED VIEW (Pick up Ass'y)

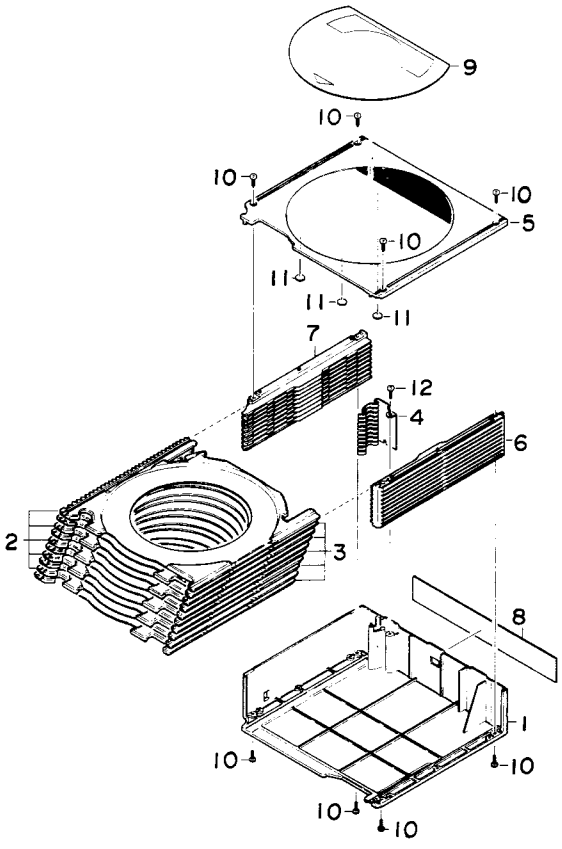


■ MECHANISM PARTS (Pick up Ass'y)

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
			Laser Pick Up Ass'y		レーザーピックアップAss'y				
※	P1	AX-60-37-50	Chassis		シャーシ	141-2-311T-55800B			
※	P2	BX-60-11-00	Shaft		シャフト	141-2-754T-99200B			
※	P3	AX-60-37-60	Spring Plate		スプリングプレート	141-2-853T-96900			
※	P4	BX-60-10-90	Shaft		シャフト	141-2-754T-99302			
※	P5	AX-60-37-70	Spring Plate		スプリングプレート	141-2-853T-96800			
※	P6	AX-60-37-80	//		//	141-2-853T-93700			
※	P7	PX-60-02-80	Pick Up Head		ピックアップ	4-180T-00900			
※	P8	CX-60-49-00	Bracket		ブラケット	141-2-210T-84800B			
※	P9	AX-60-37-90	Lever, Bracket		レバー	141-2-740T-59101			
※	P10	AX-60-38-00	Spring Coil, Bracket		スプリングコイル	141-2-856T-74700A			
※	P11	NX-60-27-00	Commutate Motor Ass'y		コミュテートモータAss'y	4-527T-31101			
※	P12	AX-60-38-10	Bracket, Motor		ブラケットモータ	141-2-378T-19900			
※	P13	AX-60-38-20	Bearing, Special Screw		ベアリング	141-2-573T-19500B			
※	P14	AX-60-38-30	//		//	141-2-573T-19600A			
※	P15	AX-60-38-40	Special Screw		オーダースクリュー	141-2-421T-70100			
※	P16	AX-60-38-50	Spring Plate		スプリングプレート	141-2-853T-93800A			
※	P17	CX-60-49-30	Gear		ギヤ	141-2-581T-46700A			
※	P18	CX-60-51-70	Special Washer		特殊ワッシャ	412-014-4002			
※	P19	CX-60-49-10	Square Belt		スケアベルト	141-2-564T-43900			
※	P20	KX-60-13-40	Switch		スイッチ	4-248T-36400			
※	P22	JX-60-02-50	Commutate Motor		コミュテートモータ	4-527T-34871			
※	P23	NX-60-27-20	Turn Table Ass'y		ターンテーブルAss'y	141-2-118T-05302			
※	P24	CX-60-53-00	Escutcheon		エスカッション	141-2-154T-18002B			
※	P25	CX-60-51-90	Special Washer		特殊ワッシャ	412-014-3807			
※	P27	CX-60-49-20	//		スペシャルワッシャ	141-2-457T-48800			
※	P28	CX-60-52-80	Cushion	10×15	クッション	141-2-447T-03400			
※	PY1	AX-60-40-80	SCR TPG PAN PCS	1.7×4	ナベタッピングネジ	411-102-3002			
※	PY2	AX-60-40-90	SCR S-TPG PAN	2×6	ナベ小ネジ	411-022-7807			
※	PY3	AX-60-41-00	SCR PAN	2×5	//	411-039-1508			
※	PY4	CX-60-52-00	Washer F	2×4.3×0.3	平座金	411-088-6301			
※	PY5	AX-60-41-10	SCR PAN	2×3	ナベ小ネジ	411-039-0105			
※	PY6	CX-60-52-10	Washer SPR2	2×4×6	ワッシャ	411-086-1803			
※	PY8	AX-60-41-20	SCR FLT PCS	1.7×3	皿小ネジ	411-017-4309			
※	PY10	AX-60-41-30	SCR TPG PAN PCS	1.7×4	ナベタッピングネジ	411-030-2504			

※New Parts (新規部品) NR

■ EXPLODED VIEW (CD Magazine)

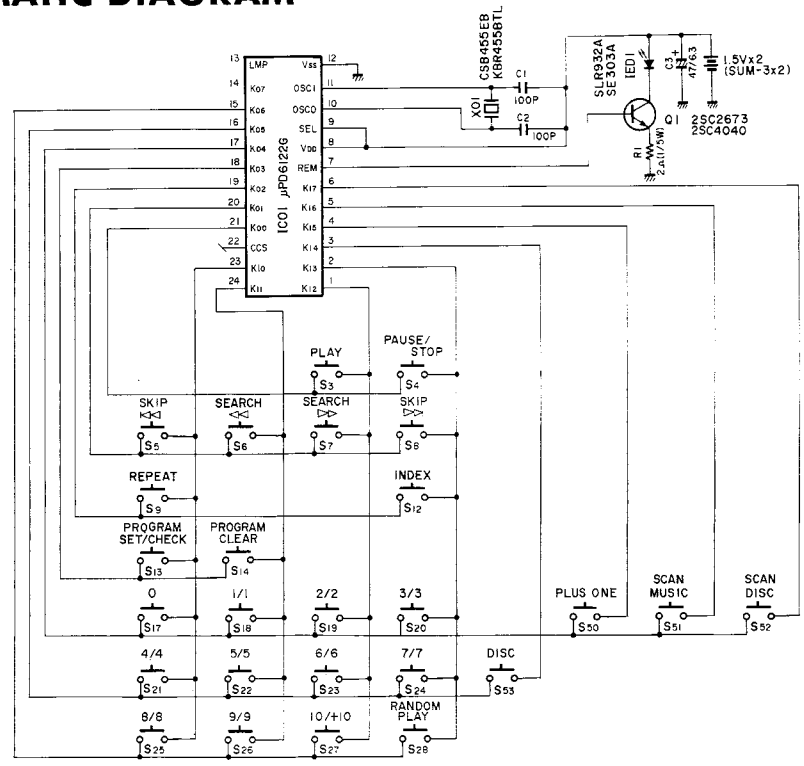


	Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
※		***VF 47 82 00***	***CD Magazine*** YCM-10	CDマガジン				
※	1	CX 60 45 80	Bottom Lid	ボトムリッド	141-2-125T-45600B			
※	2	NX 60 26 40	Tray Ass'y	トレイ Ass'y	141-0-840T-00150			
※	3	NX 60 26 50	//	//	141-0-840T-00200			
※	4	AX 60 35 00	Spring Plate, Tray Support	トレイサポート板バネ	141-2-853T-97600			
※	5	CX 60 45 90	Top Lid	トップリッド	141-2-124T-56100			
※	6	CX 60 46 00	Side Panel	サイドパネル	141-2-123T-09500			
※	7	CX 60 46 10	//	//	141-2-123T-09600			
※	8	CX 60 46 20	Marking Plate	マーキングプレート	141-2-147T-31502			
※	9	CX 60 46 30	Cover	カバー	141-2-136T-09902			
	10	ED 32 00 86	Binding Head Screw	2×8	バインド小ネジ	411-100-0201		
※	11	CX 60 46 40	Sheet	シート	141-2-247T-88001			
	12	ED 32 00 56	Binding Head Screw	2×5	バインド小ネジ	411-104-7008		

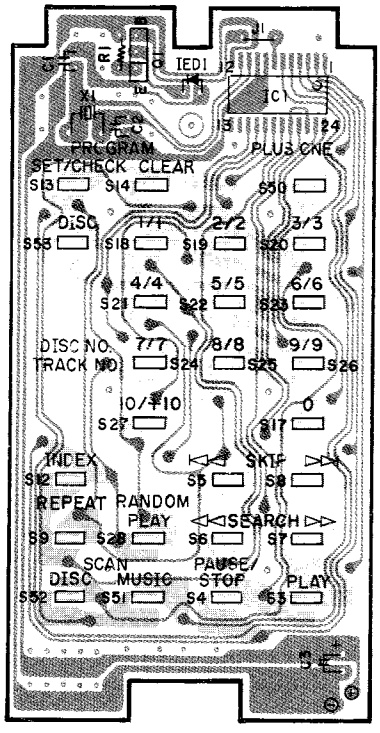
※New Parts (新規部品) NR

RS-CDC6
REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM



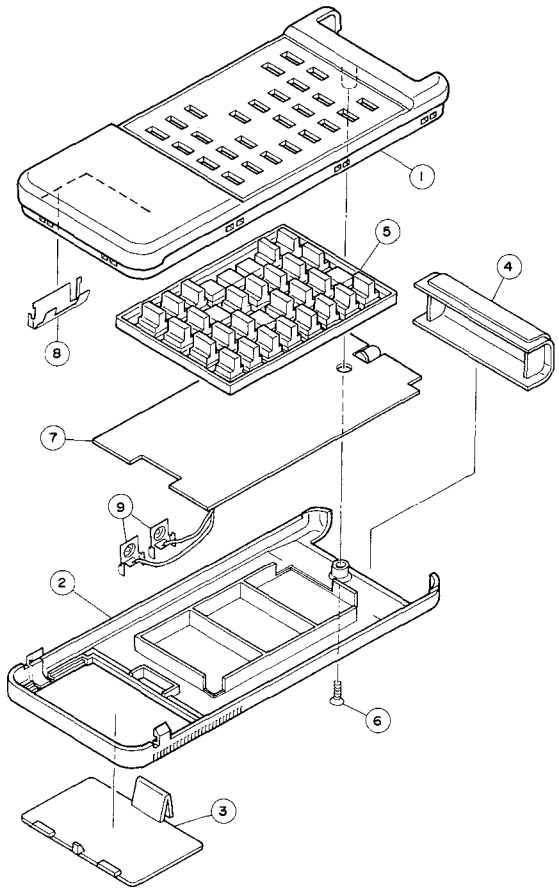
■ PRINTED CIRCUIT BOARD



- **Remote Control Data**

FUNCTION	CONTROL DATA	0	1	2	3	4	5	6	7
PLAY	02	0	1	0	0	0	0	0	0
PAUSE/STOP	03	1	1	0	0	0	0	0	0
SKIP	04	0	0	1	0	0	0	0	0
SEARCH	05	1	0	1	0	0	0	0	0
SEARCH	06	0	1	1	0	0	0	0	0
SKIP	07	1	1	1	0	0	0	0	0
REPEAT	08	0	0	0	1	0	0	0	0
INDEX	0B	1	1	0	1	0	0	0	0
SET/CHECK	0C	0	0	1	1	0	0	0	0
CLEAR	0D	1	0	1	1	0	0	0	0
0	10	0	0	0	0	1	0	0	0
1	11	1	0	0	0	1	0	0	0
2	12	0	1	0	0	1	0	0	0
3	13	1	1	0	0	1	0	0	0
4	14	0	0	1	0	1	0	0	0
5	15	1	0	1	0	1	0	0	0
6	16	0	1	1	0	1	0	0	0
7	17	1	1	1	0	1	0	0	0
8	18	0	0	0	1	1	0	0	0
9	19	1	0	0	1	1	0	0	0
10	1A	0	1	0	1	1	0	0	0
RANDOM	1B	1	1	0	1	1	0	0	0
PLUS ONE	51	1	0	0	0	1	0	1	0
MUSIC SCAN	52	0	1	0	0	1	0	1	0
DISC SCAN	53	1	1	0	0	1	0	1	0
DISC	54	0	0	1	0	1	0	1	0
CUSTOM CODE	79	1	0	0	1	1	1	1	0

■EXPLODED VIEW (RS-CDC6)



CDC-610/U/CDC-35 (E)

	Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
※		***VF 31 70 00***	***Remote Control Transmitter***	RS-CDC6	リモートコントロールトランスミッター			
※	1	CX 60 49 80	Case (A) Ass'y		ケース(A) Ass'y			
	2	XX 67 16 20	Case (B)		ケース(B)			
	3	XX 67 16 30	〃 (C)		〃 (C)			
	4	XX 67 16 40	Filter		フィルター			
※	5	CX 60 49 90	Rubber Contact		ゴム接点			
	6	XX 67 16 60	Flat Head Screw		皿小ネジ			
※	7	NX 60 27 70	P. C. Board Ass'y		プリント基板 Ass'y			
	8	XX 67 16 80	Dry Cell Terminal (A)		電池電極板(A)			
	9	XX 67 16 90	〃 (B)		〃 (B)			
※		NX 60 27 70	P. C. Board Ass'y		プリント基板 Ass'y			
		iX 60 36 00	IED	SLR932A-I-A	IED	IED1		
		iC 26 73 00	Transistor	2SC2673	トランジスタ	Q1		
		UJ 11 74 70	Electrolytic Cap.	47μF 6.3V	ケミコン	C3		
		FG 21 21 00	Ceramic Cap.	100pF 50V	セラコン	C1,2		
		QX 60 00 40	Ceramic Resonater	KBR455BTL	セラミック振動子	X1		
		iX 61 21 10	IC	μPD6122G-502	IC	IC1		
		HX 60 14 00	Carbon Resistor	2Ω 1/4W	カーボン抵抗	R1		

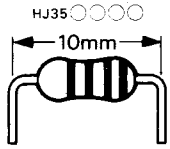
※New Parts (新規部品) NR

Parts List for Carbon Resistor

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ353100	HF853100	12KΩ	HJ357120	HF857120
1.8 〃	HJ353180	※	15 〃	HJ357150	HF857150
2.2 〃	HJ353220	HF853220	18 〃	HJ357180	HF857180
3.3 〃	HJ353330	HF853330	22 〃	HJ357220	HF857220
4.7 〃	HJ353470	HF853470	27 〃	HJ357270	HF857270
5.6 〃	HJ353560	HF853560	33 〃	HJ357330	HF857330
10 〃	HJ354100	HF854100	39 〃	HJ357390	HF857390
15 〃	HJ354150	HF854150	47 〃	HJ357470	HF857470
22 〃	HJ354220	HF854220	56 〃	HJ357560	HF857560
27 〃	HJ354270	HF854270	68 〃	HJ357680	HF857680
33 〃	HJ354330	HF854330	82 〃	HJ357820	HF857820
39 〃	HJ354390	HF854390	91 〃	HJ357910	HF857910
47 〃	HJ354470	HF854470	100 〃	HJ358100	HF858100
56 〃	HJ354560	HF854560	120 〃	HJ358120	HF858120
68 〃	HJ354680	HF854680	150 〃	HJ358150	HF858150
82 〃	HJ354820	HF854820	180 〃	HJ358180	HF858180
100 〃	HJ355100	HF855100	220 〃	HJ358220	HF858220
110 〃	HJ355110	HF855110	270 〃	HJ358270	HF858270
120 〃	HJ355120	HF855120	330 〃	HJ358330	HF858330
150 〃	HJ355150	HF855150	390 〃	HJ358390	HF858390
160 〃	HJ355160	※	470 〃	HJ358470	HF858470
180 〃	HJ355180	HF855180	560 〃	HJ358560	HF858560
220 〃	HJ355220	HF855220	680 〃	HJ358680	HF858680
270 〃	HJ355270	HF855270	820 〃	HJ358820	HF858820
330 〃	HJ355330	HF855330	1.0MΩ	HJ359100	HF859100
390 〃	HJ355390	HF855390	1.2 〃	HJ359120	※
470 〃	HJ355470	HF855470	1.5 〃	HJ359150	HF859150
510 〃	※	HF855510	1.8 〃	HJ359180	HF859180
560 〃	HJ355560	HF855560	2.2 〃	HJ359220	HF859220
680 〃	HJ355680	HF855680	3.3 〃	HJ359330	HF859330
820 〃	HJ355820	HF855820	3.9 〃	HJ359390	※
910 〃	HJ355910	HF855910	4.7 〃	HJ359470	HF859470
1.0KΩ	HJ356100	HF856100			
1.2 〃	HJ356120	HF856120			
1.5 〃	HJ356150	HF856150			
1.8 〃	HJ356180	HF856180			
2.0 〃	HJ356200	HF856200			
2.2 〃	HJ356220	HF856220			
2.4 〃	HJ356240	HF856240			
2.7 〃	HJ356270	HF856270			
3.0 〃	HJ356300	HF856300			
3.3 〃	HJ356330	HF856330			
3.6 〃	HJ356360	HF856360			
3.9 〃	HJ356390	HF856390			
4.7 〃	HJ356470	HF856470			
5.1 〃	HJ356510	HF856510			
5.6 〃	HJ356560	HF856560			
6.8 〃	HJ356680	HF856680			
8.2 〃	HJ356820	HF856820			
9.1 〃	HJ356910	HF856910			
10 〃	HJ357100	HF857100			

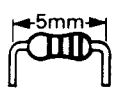
1/4W Type

HJ35○○○○

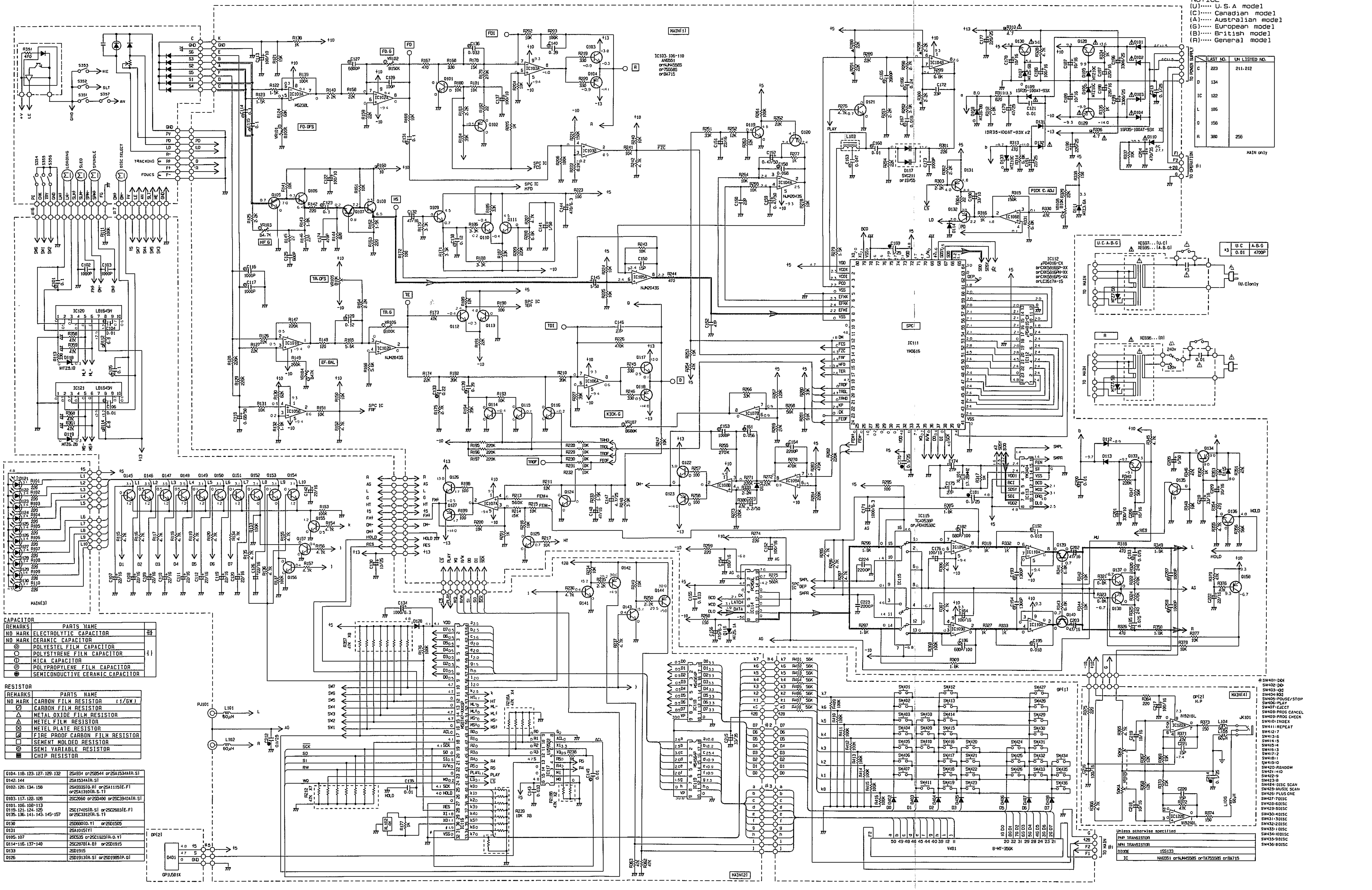


1/6W Type

HF85○○○○



SCHEMATIC DIAGRAM



NOTICE
(U)…… U.S.A model
(C)…… Canadian model
(A)…… Australian model
(G)…… European model
(B)…… British model
(R)…… General model

	LAST NO.	UN LISTED NO.
C	223	211.212
D	134	
IC	122	
L	105	
Q	158	
R	380	256

MAIN only

CAPACITOR	
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	CERAMIC CAPACITOR
◎	POLYESTEL FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⊕	MICA CAPACITOR
ⓟ	POLYPROPYLENE FILM CAPACITOR
⊛	SEMICONDUCTIVE CERAMIC CAPACITOR

RESISTOR	
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/6W)
☑	CARBON FILM RESISTOR
△	METAL OXIDE FILM RESISTOR
⚠	METEL FILM RESISTOR
☒	METEL PLATE RESISTOR
☑	FIRE PROOF CARBON FILM RESISTOR
□	SEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

Q104, 118, 123, 127, 129, 132	2SA934 or 2SB544 or 2SA1534A(R, S)
Q142, 144	2SA1534A(R, S)
Q102, 120, 134, 158	2SA933S(Q, R) or 2SA1115(E, F) or 2SA1310(R, S, T)
Q103, 117, 122, 128	2SC2060 or 2SD400 or 2SC3940A(R, S)
Q101, 106, 108~113 Q119, 121, 124, 125 Q135, 136, 141, 143, 145~157	2SC1740S(R, S) or 2SC2603(E, F) or 2SC3312(R, S, T)
Q130	2SD880(O, Y) or 2SD1505
Q131	2SA1015(Y)
Q105, 107	2SC535 or 2SC1923(R, O, Y)
Q114~116, 137~140	2SC2878(A, B) or 2SD1915
Q133	2SD1915
Q126	2SD1913(R, S) or 2SD1985(P, Q)

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

2SA933S (Q, R) 2SA1115 (E, F) 2SA1310 (R, S, T) 2SA934 2SB544 2SA1534A (R, S) 2SC535 (A, B, C) 2SC1923 (R, O, Y) 2SD1915 2SC1740S (S, R) 2SC2603 (E, F) 2SC3312 (R, S, T) 2SA1015 (Y) 2SC2060 2SD400 2SC3940A (R, S) 2SD1913 (R, S) 2SC1985 (P, Q) 2SC2878 (A, B) 2SD1915	2SD880 (O, Y) 2SD1505	1SS133 1SR35-100AT-93X MTZ5.6B MTZ3.6A MTZ10C MTZ5.1A MTZ5.1B MTZ6.2B MTZ6.8B	1SV55 SVC211	M5218L M5238L	AN6551 NJM4558S TA7555BS BA715 NJM2043S	LB1645N	TC4053BP µPD4053 LU59522 PCM56L YM3404	M54564P	µPD4016-CX CXK5816SP CXK5816PN CXK5816PS LC3517B-15	M50747	YM3616

* All voltages are measured with a 10MΩ/DC electric volt meter.
* Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.