

In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

J=JAPAN MADE  
S=SINGAPORE MADE  
F=FRANCE MADE

\* Refer to parts list on page 35.

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter 1, Subchapter J.

**DANGER : Laser radiation when open and interlock defeated.  
AVOID DIRECT EXPOSURE TO BEAM.**

# DP-950

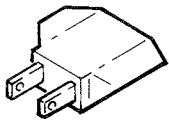
## CONTENTS / ACCESSORIES

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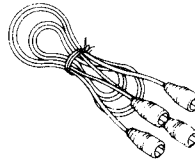
### Accessories

AC plug adaptor .....1

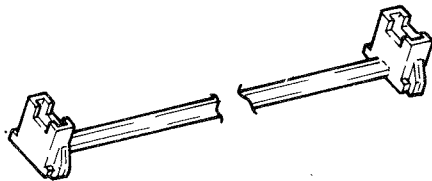


(Except for some areas)  
For the unit with a European AC  
plug in areas other than Europe.

Audio cord .....1

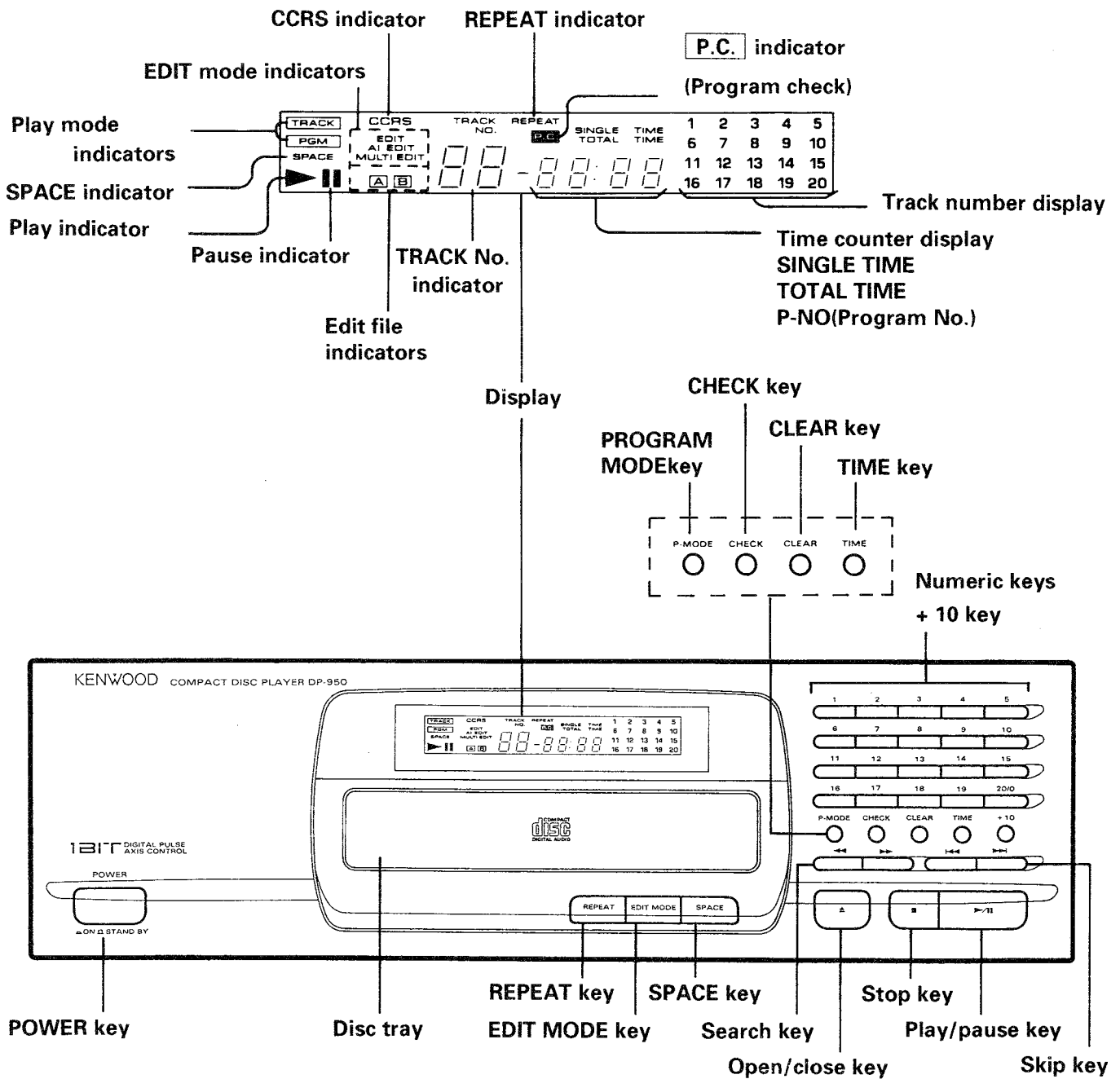


System control cord ....1



## CONTROLS / CAUTION

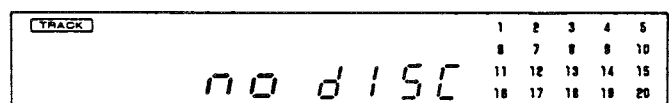
### Controls



### Caution

**Note related to transportation and movement**  
Carry out the operations listed below before transporting or moving this unit.

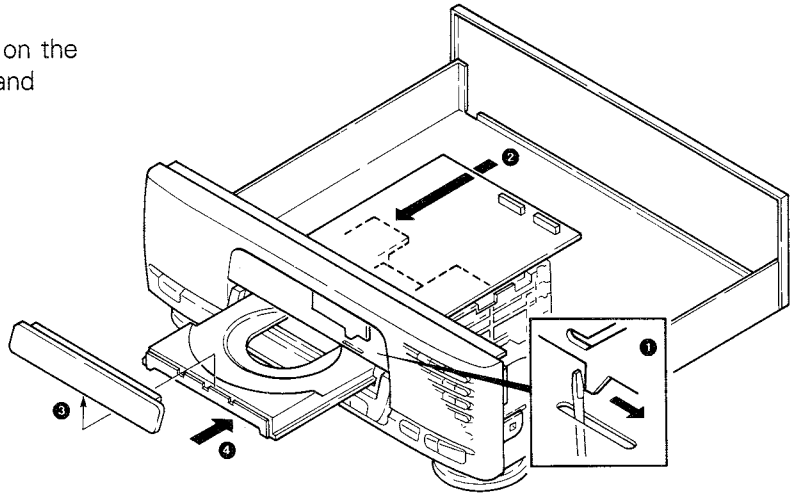
1. After making sure that there is no disc loaded in the unit, turn the POWER switch ON.
2. Wait for several seconds to verify that display becomes as shown, and then turn the POWER switch back OFF.



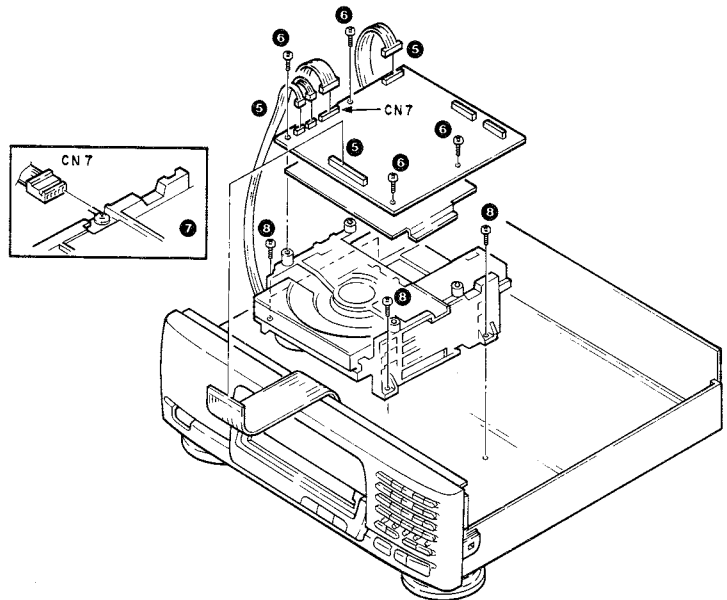
## DISASSEMBLY FOR REPAIR

### 1. How to Disassemble

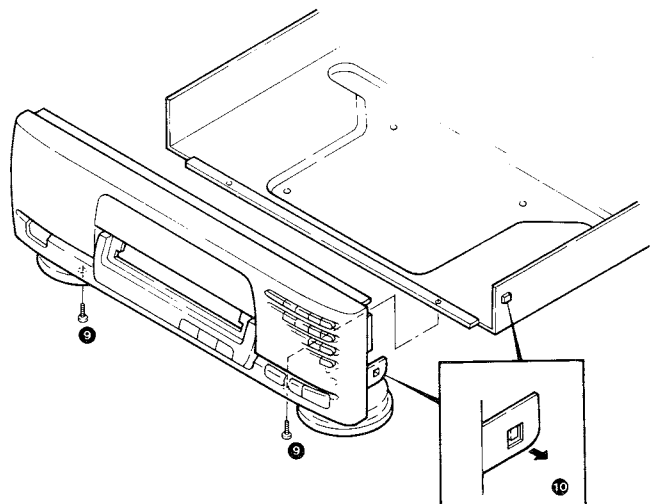
1. Insert the screw driver into the hole located on the bottom of the unit, as shown in the figure, and push the slider with it. (1)
2. Pull out the tray. (2)
3. Remove the tray panel. (3)
4. Push the tray backwards. (4)



5. Remove 4 connectors and flexible cable. (5)
6. Remove 4 screws and PC board. (6)
7. Insert CN7 connector into LD short-pin. (7)
8. Remove 4 screws and mechanism ass'y. (8)



9. Remove 2 screws. (9)
10. Remove both side of catches and panel. (10)

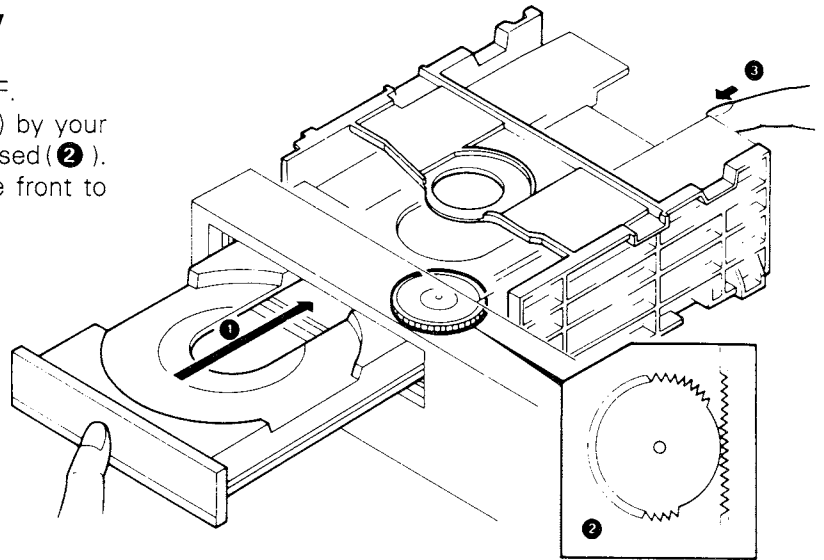


## DISASSEMBLY FOR REPAIR

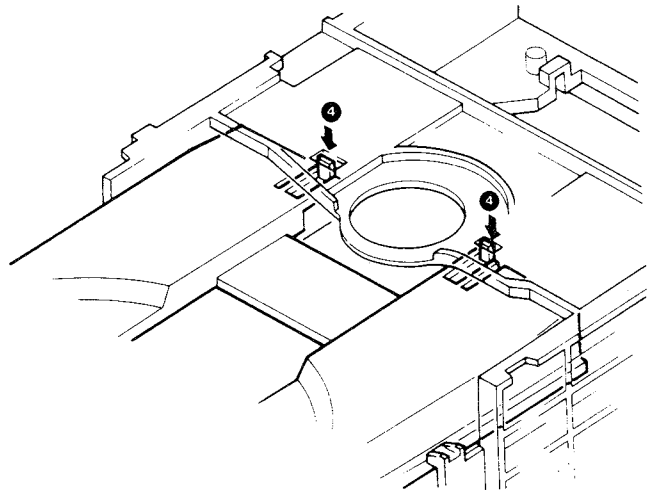
### 2. Removing and Installing the Tray

#### 2-1. Removing the tray

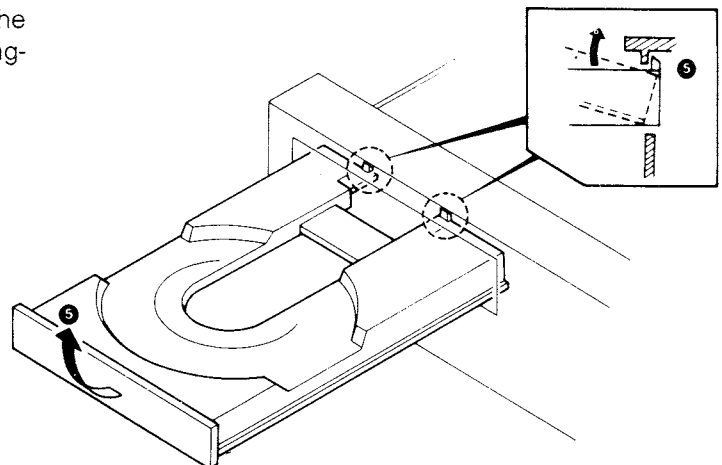
- \* Open the disc tray and turn the power OFF.
- 1. Push the tray gradually into the unit ( ❶ ) by your hand. In this condition, the gear will be released ( ❷ ).
- 2. Push the rear end of the tray toward the front to remove the tray until it stops ( ❸ ).



- 3. Release the two stoppers ( ❹ ) and take out the tray front the unit.



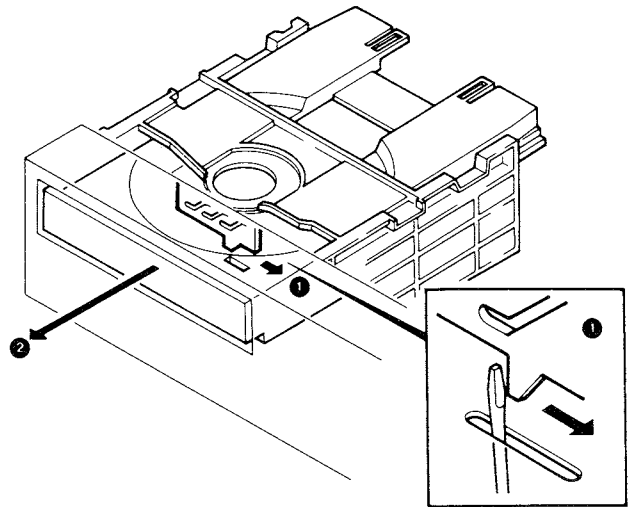
- 4. When removing the tray, release the stoppers in the direction of the arrow ( ❺ ) to prevent it from engaging with the sub panel.



## DISASSEMBLY FOR REPAIR

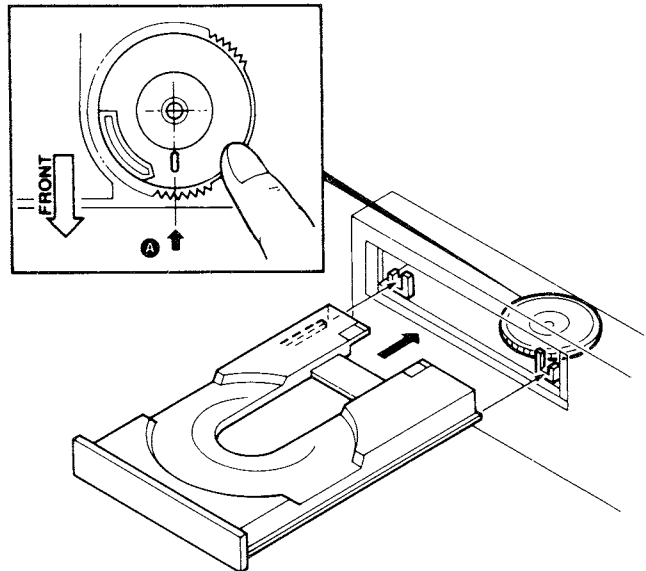
### 2-2. When the power can not be turned ON, or when the tray can not be opened by pressing the OPEN key

1. Insert the screwdriver into the hole located on the bottom of the unit, as shown in the diagram, and push the lever with the screwdriver (①).
2. When the tray comes out slightly, the gear is released. Then take out the tray toward the front (②).



### 2-3. Installing the tray

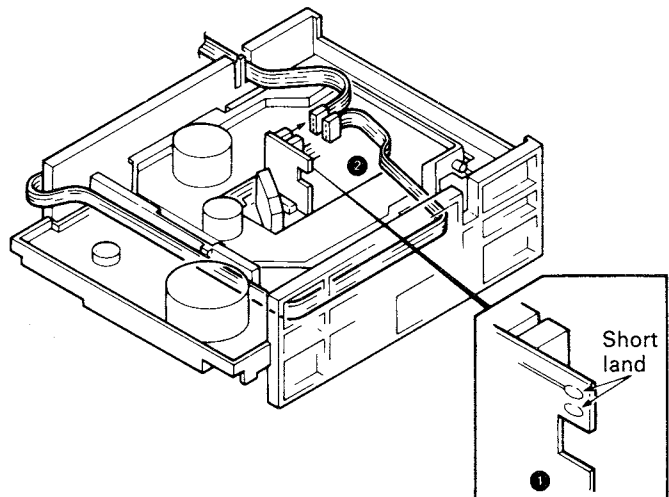
1. Set the gear to the position (A) shown in the diagram.
2. Insert the tray along with the guide rails on the both sides.



### 3. Removing the Pickup (JAPAN made)\*

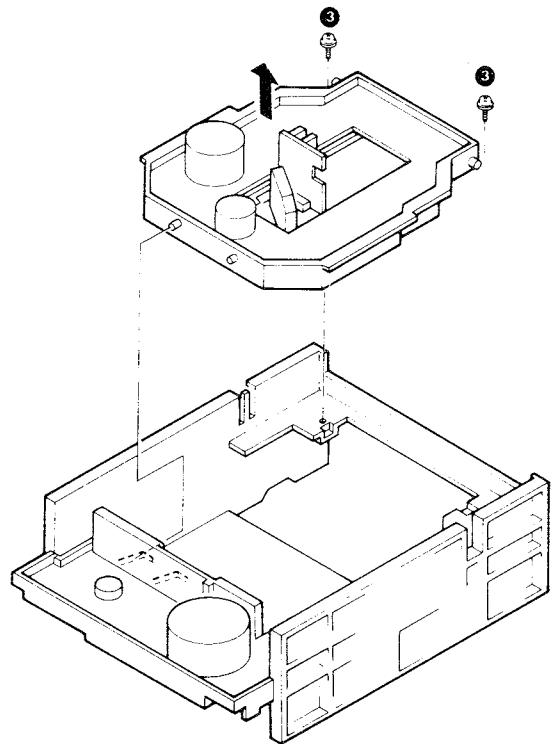
1. Turn over the mechanism and short the short land of the pickup (①).
2. Disconnect the two connectors (②).

\* When repairing SINGAPORE or FRANCE made unit, refer to DP-930 service manual (B51-3950-00).

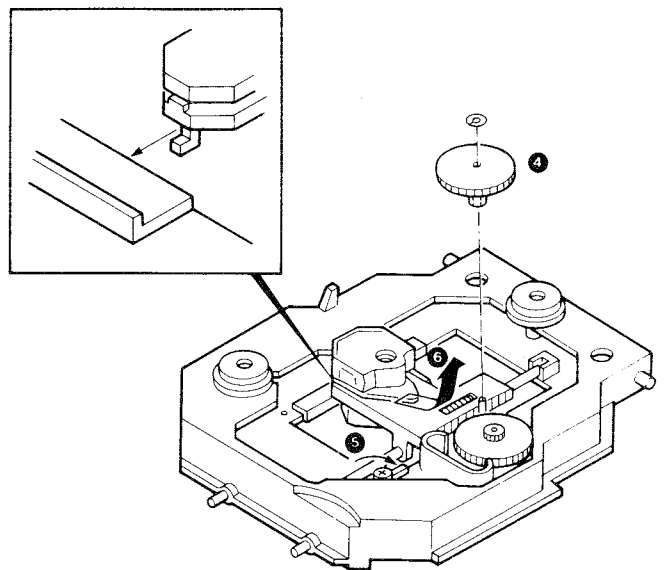


## DISASSEMBLY FOR REPAIR

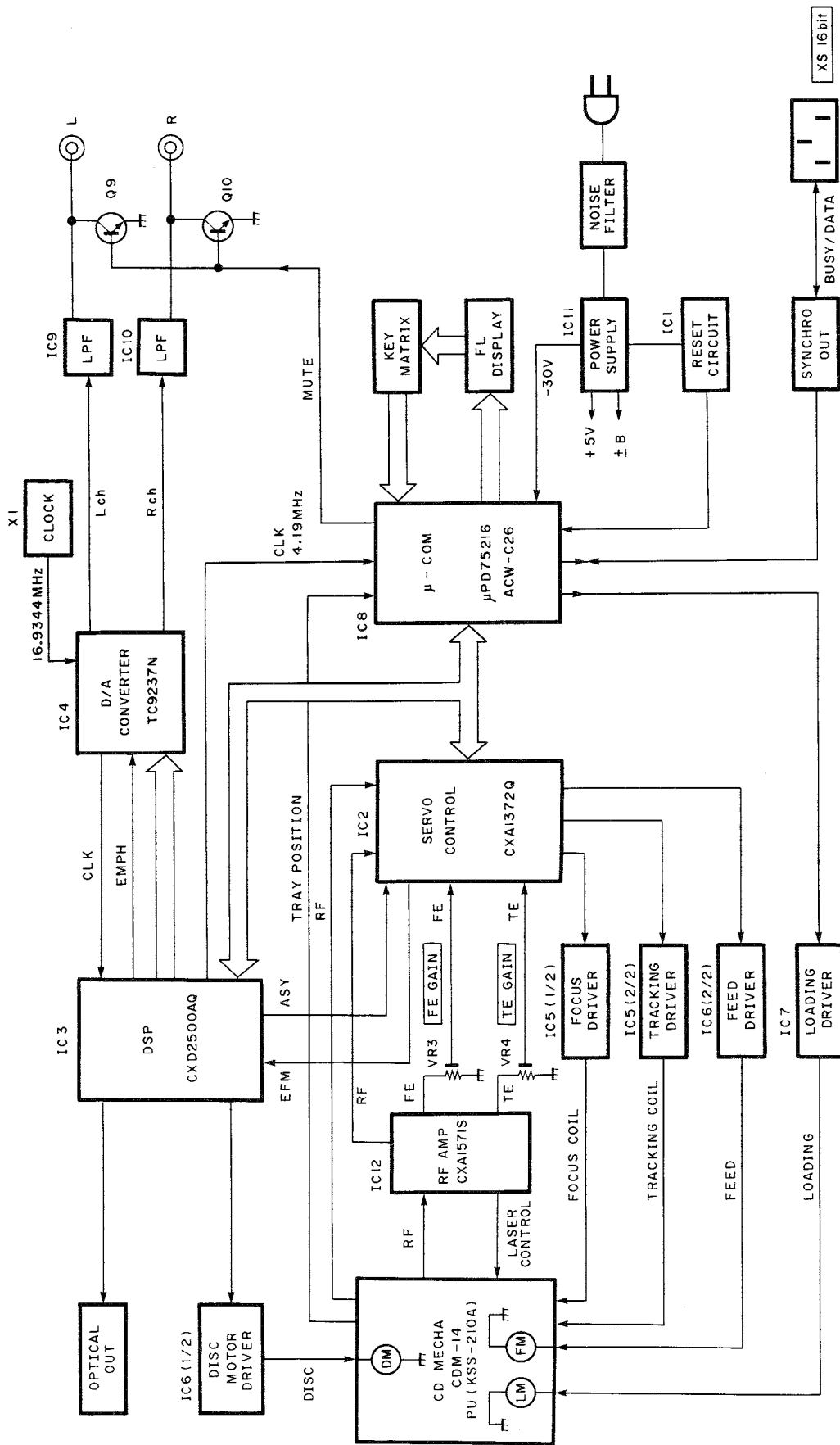
3. Remove the two screws ( ❸ ), then remove the MD assembly.



4. Remove the snap ring, then remove the gear ( ❹ ).
  5. Remove the stopper ( ❺ ).
  6. Remove the pickup in the direction of the arrow ( ❻ ).
- Note :** When installing the pickup, in the reverse order of disassembly.  
 Unsolder the short land after connecting the connector.



## BLOCK DIAGRAM



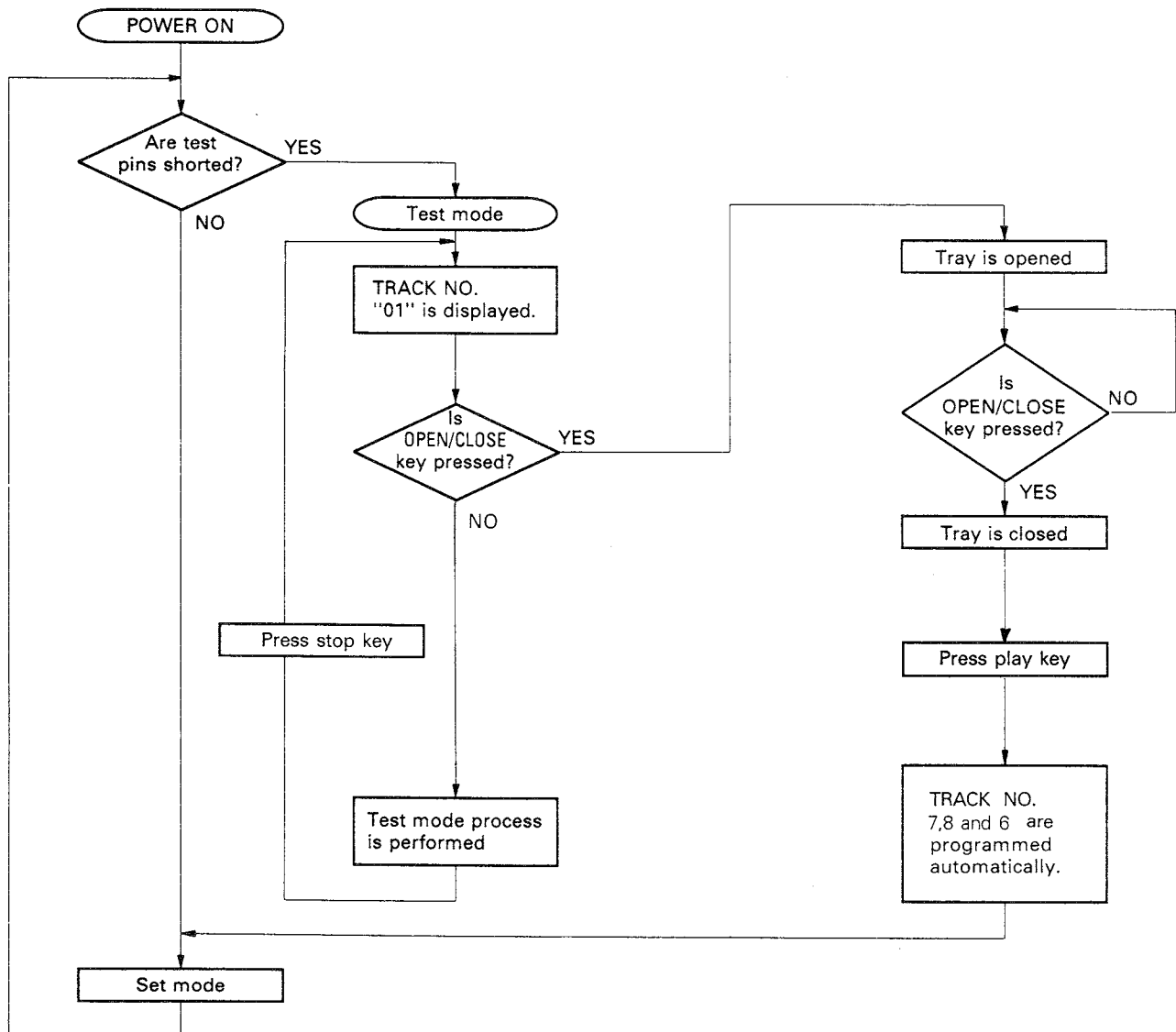
## CIRCUIT DESCRIPTION

### 1. Test Mode

#### 1-1. Setting the test mode

This microprocessor built in this unit can be put to TEST MODE by just short-circuiting the test pins #1 and #2.

The TEST MODE can be also initiated with short circuiting the test pins when tray is open. If unit is in test mode, TRACK NO. display "05".



## CIRCUIT DESCRIPTION

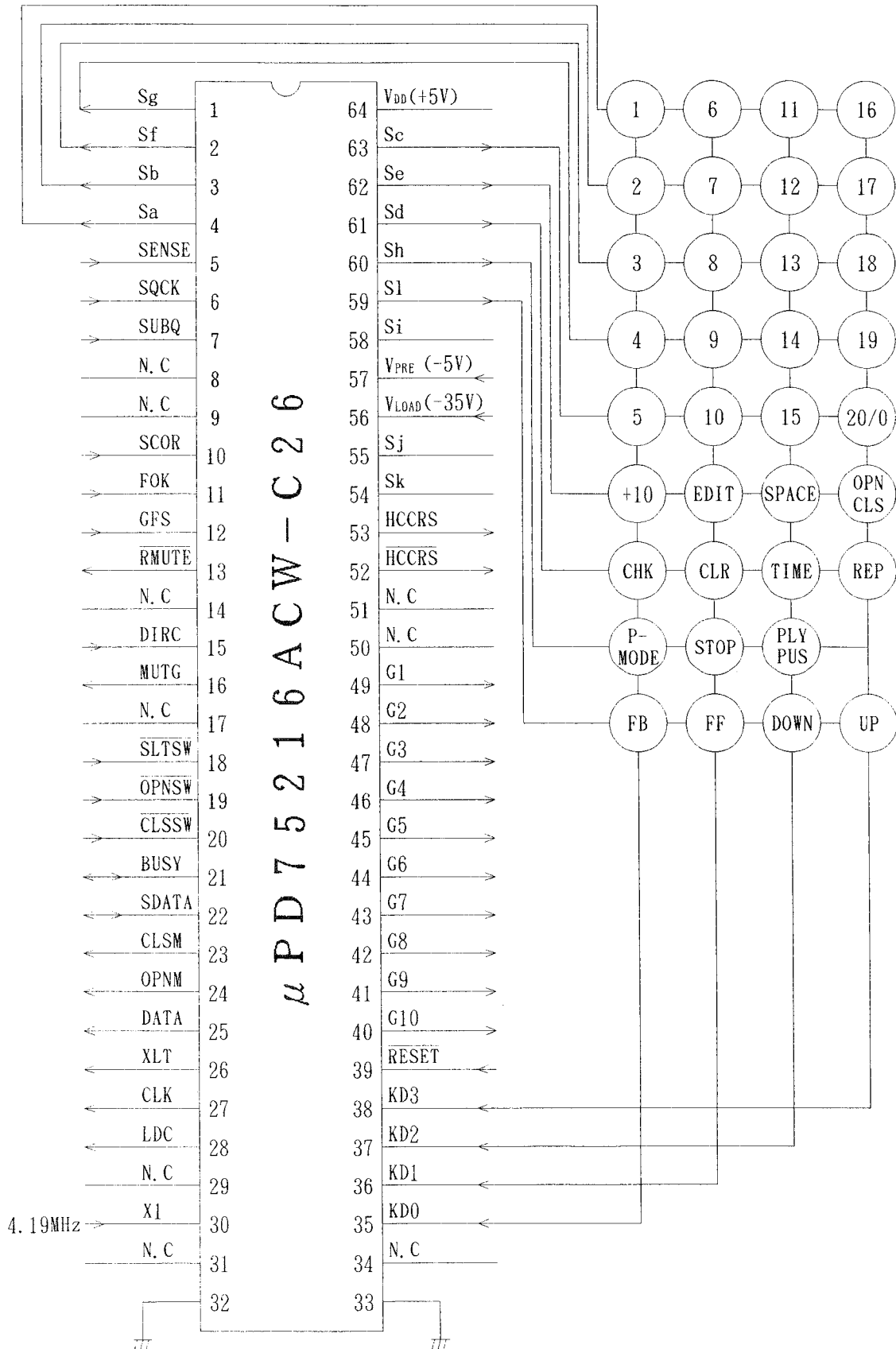
### 1-2. Key and functions valid in test mode

No.	Input key	Function	Track No. display																																		
1	PLAY	(1) Focusing servo ..... ON (2) Tracking servo ..... ON (3) Feed servo ..... ON	TRACK NO. 05 ↓ Displayed for a few seconds after completion (1), (2) and (3). ↓ Disc Track No. is displayed.																																		
2	CHECK or 10 key	(1) Focusing servo ..... ON (2) Tracking servo ..... OFF (3) Feed servo ..... OFF	TRACK NO. 03																																		
3	CLEAR	(1) Focusing servo ..... ON (2) Tracking servo ..... ON (3) Feed servo ..... OFF	TRACK NO. 04																																		
4	STOP	(1) Focusing servo ..... OFF (2) Tracking servo ..... OFF (3) Feed servo ..... OFF	TRACK NO. 01																																		
5	▶▶	In the STOP mode, moves the pickup slightly toward the outer position of disc. When feed servo is ON, sets the track gain to "H".	-																																		
6	◀◀	In the STOP mode, moves the pickup slightly toward the inner position of disc. When feed servo is ON, sets the track gain to "L".	-																																		
7	UP ▶▶	Turns all FL display lamps ON.	TRACK NO. 88																																		
8	DOWN ◀◀	Turns all FL display lamps OFF. "TRACK NO." is lighted.	TRACK NO. 88																																		
9	+10	Playback Track No.1 under High-speed mode (If not open tray, SPACE key function is available).	-																																		
10	SPACE	Set playback mode to High-speed or Normal.	-																																		
11	P. MODE	Track No. 7,8, and 6 (High-speed) are programmed and playback from Track No.7. The test mode is canceled.	-																																		
12	OPEN/CLOSE	When the tray is opened then closed. Track No. 7, 8, and 6 are programmed and set is in STOP mode. The test mode is canceled.	TRACK NO. 00																																		
13	Numeric key (1 ~ 10)	Jumps tracks as shown below. <table border="1" style="margin-left: 20px;"> <tbody> <tr> <td>Key</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Number of tracks</td> <td>1</td> <td>4</td> <td>128</td> <td>512</td> <td>1000</td> </tr> <tr> <td>Direction</td> <td colspan="5" style="text-align: center;">Outer</td> </tr> <tr> <td>Key</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td rowspan="3" style="text-align: center;">/</td> </tr> <tr> <td>Number of tracks</td> <td>1</td> <td>4</td> <td>128</td> <td>512</td> </tr> <tr> <td>Direction</td> <td colspan="4" style="text-align: center;">Inner</td> </tr> </tbody> </table>	Key	1	2	3	4	5	Number of tracks	1	4	128	512	1000	Direction	Outer					Key	6	7	8	9	/	Number of tracks	1	4	128	512	Direction	Inner				-
Key	1	2	3	4	5																																
Number of tracks	1	4	128	512	1000																																
Direction	Outer																																				
Key	6	7	8	9	/																																
Number of tracks	1	4	128	512																																	
Direction	Inner																																				
14	REPEAT	(1) Tray ..... Opened (2) Laser ..... ON The REPEAT function is canceled when the tray is closed by pressing the tray. "REPEAT" figures is lighted.	TRACK NO. 02																																		

## CIRCUIT DESCRIPTION

### 2. Microprocessor : $\mu$ PD75216ACW-C26 (IC8)

#### 2-1. Terminal connection diagram



## CIRCUIT DESCRIPTION

### 2-2. Explanation of terminals

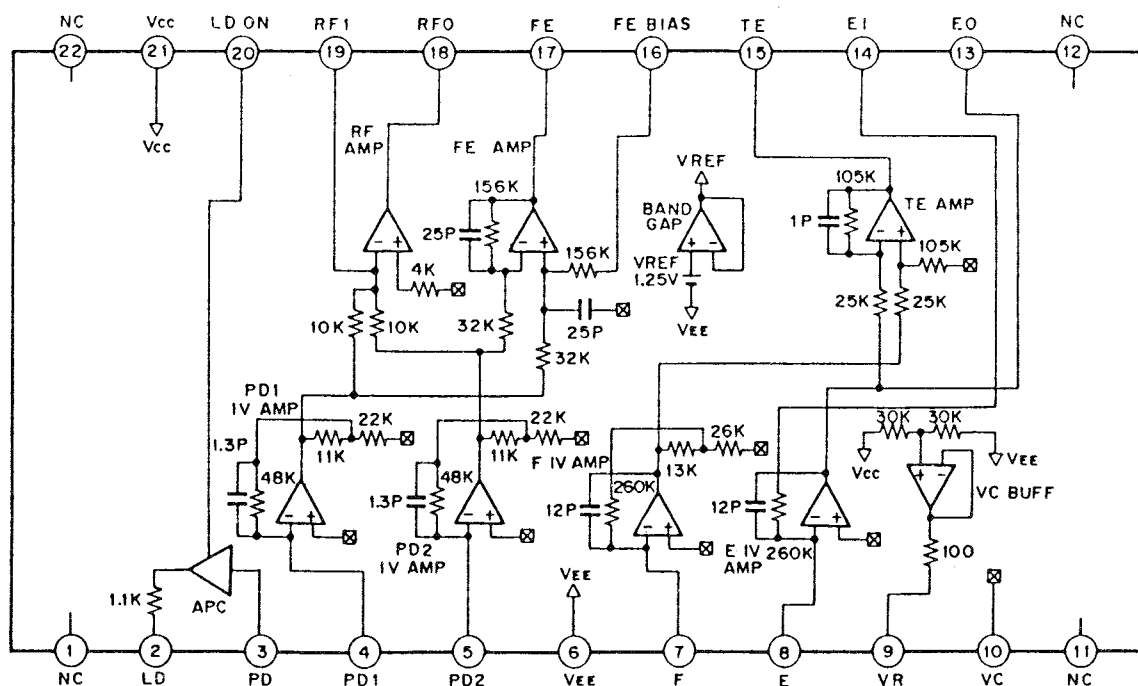
Terminal No.	Terminal Name	I/O	Function Name	Function
1~4	S3~S0	O	g, f, b, a	FL segment control terminals (also used for key scan signals).
5	P00/int4	I	SENSE	Signal detection terminal for SENSE signal from signal processor and servo ICs.
6	P01/SCK	I	SQCK	Q data read clock input terminal.
7	P02/SO	I	SUBQ	Q data input terminal.
8	P03/SI	I	N.C	Not used.
9	P10/INT0	I	N.C	Not used.
10	P11/INT1	I	SCOR	Sub-Code frame sync detection signal input terminal.
11	P12/INT2	I	FOK	Input terminal for FOK signal from RF amp. (Focus OK : "H")
12	P13/TIO	I	GFS	Frame sync signal input terminal. ("H" : Frame sync)
13	P20	O	RMUTE	Analog muting control terminal. (Active "L")
14	P21	O	N.C	Not used.
15	P22	O	DIRC	DIRC terminal of servo IC.
16	P23	O	MUTG	MUTE terminal of signal processor IC. (Active "H")
17	P30	O	N.C	Not used.
18	P31	I	SLTSW	Sled limit switch. (Innermost position : "L")
19	P32	I	OPNSW	Tray open switch. (Open : "L")
20	P33	I	CLSSW	Tray close switch. (Close : "L")
21	P60	I/O	BUSY	Serial BUSY signal input/output terminal.
22	P61	I/O	SDATA	Serial DATA signal input/output terminal.
23	P62	O	CLSM	Tray motor close terminal. (Active "H")
24	P63	O	OPNM	Tray motor open terminal. (Active "H")
25	P40	O	DATA	Signal processor and servo IC control output terminal. (DATA)
26	P41	O	XLT	Signal processor and servo IC control output terminal. (LATCH)
27	P42	O	CLK	Signal processor and servo IC control output terminal. (CLOCK)
28	P43	O	LCD	Laser ON/OFF signal output terminal. (Active "H")
29	PPO	-	N.C	Not used.
30	X1	I	X1	System clock input terminal.
31	X2	-	X2	Not used.
32	Vss	-	Vss	GND.
33,34	XT1,XT2	-	-	Not used. (XT1 : GND)
35~38	P50~P53	I	KD0~KD3	Input terminals for key return signals from key matrix.
39	RESET	I	RESET	Reset input terminal. (Active "L")
40~49	T0~T8	I	G10~G1	FL digit control terminals.
50	PH3	O	N.C	Not used.
51	PH2	O	N.C	Not used.
52	PF1	O	HCCRS	In high-speed playback : Active "L"
53	PH0	O	HCCRS	In high-speed playback : Active "H"
54,55	S11,S10	O	k, j	FL segment control terminals.
56	VLOAD	I	VLOAD	FL driver negative power supply. (-35V)
57	VPRE	I	VPRE	FL predriver power supply. (-5V)
58~63	S9~S4	O	i, l, h, d, e, c	FL segment control terminals. (Also used for key-scan signals)
64	VDD	I	VDD	Power supply. (+5V)

## CIRCUIT DESCRIPTION

### 3. RF amplifier : CXA1571S (IC12)

CXA1571S is an IC developed for compact disc players. It contains an RF amplifier for 3 spot optical pickup, focus error amplifier, tracking error amplifier, and APC circuit.

#### 3-1. Block diagram



#### 3-2. Pin functions

Pin No.	Pin name	I/O	Function
2	LD	O	APC LD amplifier output pin.
3	PD	I	APC LD amplifier input pin.
4	PD1	I	RF I-V amplifier inverted input pin. Current input by connecting to the photo diode A+C terminals.
5	PD1	I	RF I-V amplifier inverted input pin. Current input by connecting to the photo diode B+D terminals.
7	F	I	F I-V amplifier inverted input pin. Current input by connecting to the photo diode F terminal.
8	E	I	E I-V amplifier inverted input pin. Current input by connecting to the photo diode E terminal.
9	VR	O	CD voltage output pin of (Vcc+VEE) / 2.
10	VC	I	Connected GND when using dual power supply (±). Connected to VR (pin 9) when using a single power supply.
13	EO	O	E output of I-V amplifier.
14	EI	-	E I-V amplifier feedback input pin. For E I-V amplifier gain adjustment.
15	TE	O	Tracking error amplifier output pin.
16	FE-BIAS	I	Bias pin on the focus error amplifier non-inverted side.
17	FE	O	Focus error amplifier output pin.
18	RFO	O	RF summing amplifier output pin.
19	RFI	I	Inverted input pin of RF amplifier. Gain of amplifier is fixed by resistor between RFO and RFI.
20	LD-ON	I	LD ON / OFF select pin. (Vcc : ON)

## CIRCUIT DESCRIPTION

### 4. Servo Signal Processor : CXA1372Q (IC2)

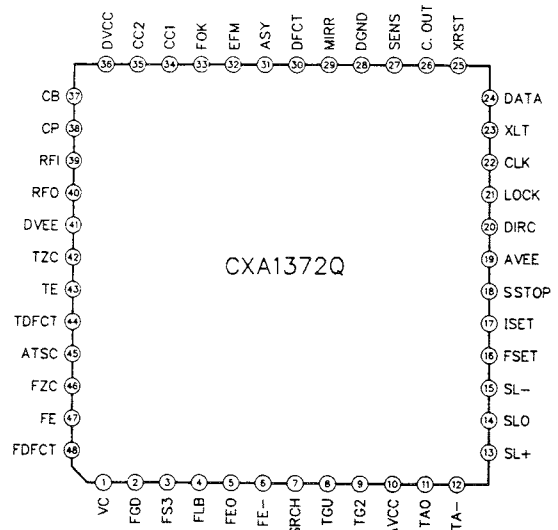
#### Outline

CXA1372Q is a bipolar IC developed to be used for processing of the RF signal (Focus OK, mirror, defect, comparator of EFM) and servo control.

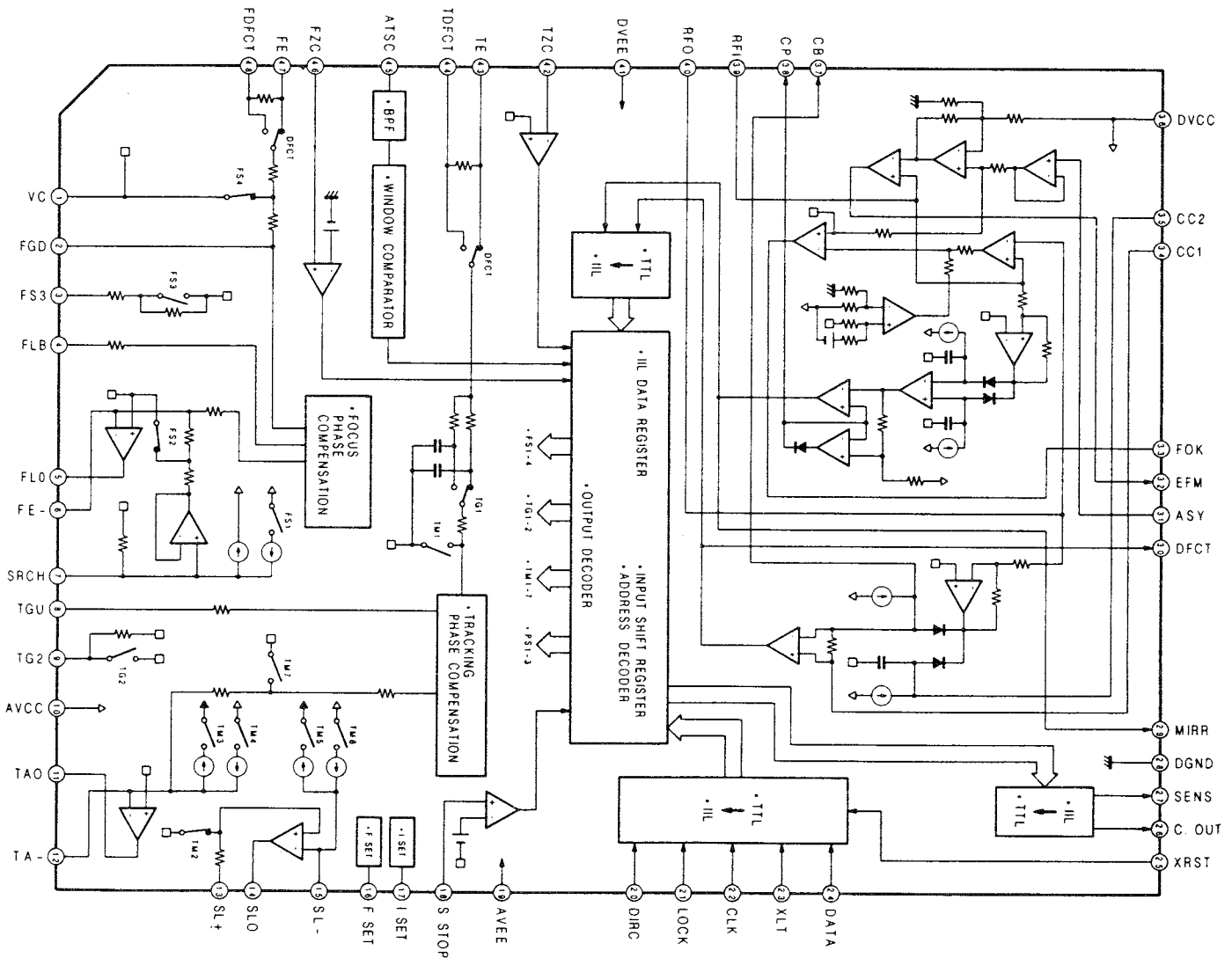
#### Functions

- Auto asymmetry control
- Focus OK detection circuit
- Mirror detection circuit
- Defect detection and countermeasure circuit
- EFM comparator
- Focus servo control
- Tracking servo control
- Thread servo control

### 4-1. Terminal connection diagram



### 4-2. Block diagram



## CIRCUIT DESCRIPTION

## 4-3. Explanation of terminals

Pin No.	Pin name	I/O	Function
1	VC	I	Middle-point voltage input terminal. When two power sources are used : GND, when single power source is used : (Vcc+GND)/2.
2	FGD	I	When lowering the high-band gain of the focus servo, insert a capacitor between this terminal and terminal No. 3.
3	FS3	I	Change the high-band gain of the focus servo by turning FS3 on and off.
4	FLB	I	Outside terminal of time constant for raising the low-band of the focus servo.
5	FEO	O	Focus drive output.
6	FE-	I	Inverted input terminal of focus amplifier.
7	SRCH	I	Outside terminal of time constant for making focus search waveform.
8	TGU	I	Outside terminal of time constant for changing high-band gain of tracking.
9	TG2	I	Outside terminal of time constant for changing high-band gain of tracking.
10	AVCC		
11	TAO	O	Tracking drive output.
12	TA-	I	Inverted input terminal of tracking amplifier.
13	SL+	I	Non-inverted input terminal of thread amplifier.
14	SLO	O	Thread drive output.
15	SL-	I	Inverted input terminal of thread amplifier.
16	FSET	I	Terminal for setting the peak for phase compensation of focus tracking.
17	ISET	I	Current for determining the height of the focus search track jump thread kick is applied.
18	SSTOP	I	Terminal for ON/OFF detecting signal of limit switch for detecting the most inside line of disc.
19	AVEE		
20	DIRC	I	Used to jump over one track. 47k $\Omega$ pull-up resistor is inserted.
21	LOCK	I	When "L", thread runaway-preventive circuit operates. 47k $\Omega$ pull-up resistor is inserted.
22	CLK	I	Clock input for transferring the serial data from CPU (having no pull-up resistors).
23	XLT	I	Latch input from CPU (having no pull-up resistors).
24	DATA	I	Serial data input from CPU (having no pull-up resistors).
25	XRST	I	Reset when reset input terminal is at "L" (having no pull-up resistors).
26	SENS	O	Outputs FZC, AS, TZC, SSTOP, etc. on receipt of command from CPU.
27	C. OUT	O	Signal output for counting tracks.
28	DGND		
29	MIRR	O	Output terminal of MIRR comparator. (DC voltage : Load of 10k $\Omega$ connected)
30	DFCT	O	Output terminal of DEFECT comparator. (DC voltage : Load 10k $\Omega$ connected)
31	ASY	I	Input terminal of auto asymmetry control.
32	EFM	O	Output terminal of EFM comparator. (DC voltage : Load of 10k $\Omega$ connected)
33	FOK	O	Output terminal of focus OK comparator. (DC voltage : Load of 10k $\Omega$ connected)
34	CC1	I	DEFECT bottom hold output terminal.
35	CC2	O	Terminal in which DEFECT bottom hold output is input after capacitive coupling.
36	DVCC		
37	CB	I	Terminal to which DEFECT bottom hold capacitor is connected.
38	CP	I	Terminal for connecting MIRR hold comparator. Non-inverted input terminal of MIRR comparator.
39	RFI	I	Terminal in which output of RF summing amplifier is input after capacitive coupling.
40	RFO	O	Output terminal of RF summing amplifier. Check point of eye pattern.
41	DVEE		
42	TZC	I	Input terminal of tracking zero cross comparator.
43	TE	I	Input terminal of tracking error.
44	TDFCT	I	Terminal for connecting the capacitor for time constant in case of defect.
45	ATSC	I	Input terminal of window comparator for detecting ATSC.
46	FZC	I	Terminal for inputting the focus zero cross comparator.
47	FE	I	Input terminal of focus error.
48	DFDCT	I	Terminal for connecting capacitor for time constant in case of defect.

## CIRCUIT DESCRIPTION

### 5. Digital Signal Processor : CXD2500AQ (IC3)

#### Outline

The CXD2500AQ is a digital signal processing LSI for a compact disc player, which has the following functions.

- A wide frame jitter margin realized by 32-KRAM ( $\pm 28$  frames)
- Bit clocks for strobing EFM signal are generated by the digital PLL, and the capture range is  $\pm 150\text{kHz}$  minimum
- Demodulation of EFM data
- Protection and reinforcement of EFM frame sync signal
- Strong error correction by refined super strategy. C1 : Double correction, C2 : Quadruple correction
- Double-speed replay and variable pitch replay
- Reduction of noise generation at track jumps
- Auto zero cross muting
- Demodulation of sub-code and detection of errors in sub-code Q data

- Digital spindle servo (Having over-sampling filter)
- 16-bit traverse counter
- CPU interface by serial bus
- A built-in servo auto sequencer
- Output for digital audio interface
- Built-in digital level meter and peak meter
- Applicable to bilingual system

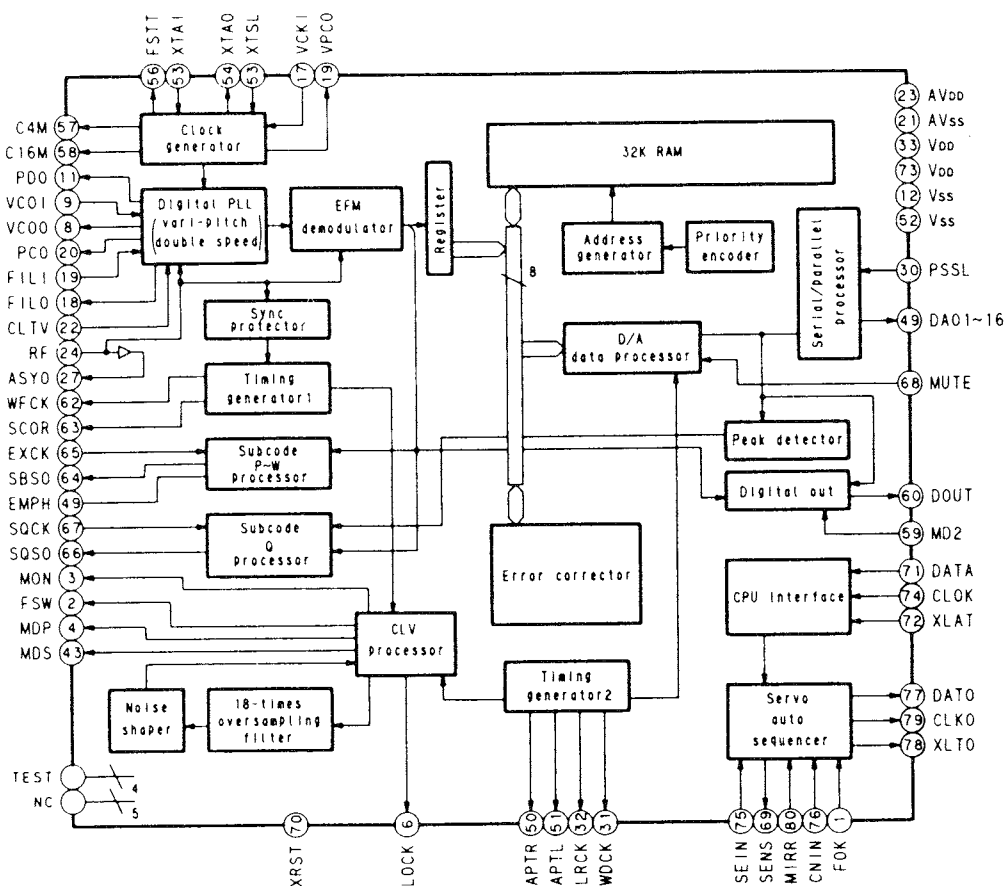
#### Features

- One chip of this LSI can process all the digital signals used for replay
- Integration level can be heightened because of the built-in RAM

#### Structure

Silicon gate CMOS

#### 5-1. Block diagram



## CIRCUIT DESCRIPTION

### 5-2. Pin functions

Pin No.	Pin name	I/O	Function
1	FOK	I	Focus OK input terminal. Used for SENS output and servo auto sequencer.
2	FSW	O	Output for changing output filter of spindle motor.
3	MON	O	ON/OFF control output of spindle motor.
4	MDP	O	Servo control of spindle motor.
5	MDS	O	Servo control of spindle motor.
6	LOCK	O	Outputs "H", when GFS is sampled at 460Hz and it is "H". Output "L", if "L" is detected eight times continuously.
7	NC	-	Not used.
8	VCOO	O	Oscillation circuit output for analog EFM PLL.
9	VCOI	I	Oscillation circuit input for analog EFM PLL. $f_{lock} = 8.6436\text{MHz}$
10	TEST	I	Test terminal, normally grounded.
11	PDO	O	Charge pump output for analog EFM PLL.
12	Vss	-	GND.
13~15	NC	--	Not used.
16	VPCO	O	PLL charge pump output for variable pitch.
17	VCKI	I	Clock input $f_{center} = 16.9344\text{MHz}$ from outside VCO for variable pitch.
18	FILO	O	Filter output for master PLL (Slave = Digital PLL).
19	FILI	I	Filter input for master PLL.
20	PCO	O	Charge pump output for master PLL.
21	AVss	-	Analog GND.
22	CLTV	I	VCO control voltage input for master.
23	AVdd	-	Analog power source (+5V).
24	RF	I	EFM signal input.
25	TEST2	I	Used for grounding.
26	TEST3	I	Used for grounding.
27	ASYO	O	EFM full swing output ("L" = Vss, "H" = Vdd).
28	TEST4	I	Used for grounding.
29	NC	-	Not used.
30	PSSL	I	Audio data output mode changing input. Set to "L" for serial output and "H" for parallel output.
31	WDCK	O	D/A interface for 48-bit slot. Word clock $f = 2 F_s$
32	LRCK	O	D/A interface for 48-bit slot. LR clock $f = F_s$
33	Vdd	-	Source voltage (+5V).
34	DA16	O	Outputs DA16 (MSB) when PSSL = 1. Outputs serial data of 48-bit slot when PSSL = 0. (2s' COMP, MSB first)
35	DA15	O	Outputs DA15 when PSSL = 1. Outputs bit clock of 48-bit slot when PSSL = 0.
36	DA14	O	Outputs DA14 when PSSL = 1. Outputs serial data of 64-bit slot when PSSL = 0. (2s' COMP, LSB first)
37	DA13	O	Outputs DA13 when PSSL = 1. Outputs bit clock of 64-bit slot when PSSL = 0.
38	DA12	O	Outputs DA12 when PSSL = 1. Outputs LR clock of 64-bit slot when PSSL = 0.
39	DA11	O	Outputs DA11 when PSSL = 1. Outputs GTOP when PSSL = 0.
40	DA10	O	Outputs DA10 when PSSL = 1. Outputs XUGF when PSSL = 0.
41	DA09	O	Outputs DA09 when PSSL = 1. Outputs XPLCK when PSSL = 0.
42	DA08	O	Outputs DA08 when PSSL = 1. Outputs GFS when PSSL = 0.
43	DA07	O	Outputs DA07 when PSSL = 1. Outputs RFCK when PSSL = 0.
44	DA06	O	Outputs DA06 when PSSL = 1. Outputs C2P0 when PSSL = 0.
45	DA05	O	Outputs DA05 when PSSL = 1. Outputs XRAOF when PSSL = 0.
46	DA04	O	Outputs DA04 when PSSL = 1. Outputs MNT3 when PSSL = 0.
47	DA03	O	Outputs DA03 when PSSL = 1. Outputs MNT2 when PSSL = 0.
48	DA02	O	Outputs DA02 when PSSL = 1. Outputs MNT1 when PSSL = 0.
49	DA01	O	Outputs DA01 when PSSL = 1. Outputs MNT0 when PSSL = 0.

## CIRCUIT DESCRIPTION

Pin No.	Pin name	I/O	Function
50	APTR	O	Control output for correcting aperture. Set to "H" when Rch.
51	APTL	O	Control output for correcting aperture. Set to "H" when Lch.
52	Vss	-	GND.
53	XTAI	I	X'tal oscillation circuit input of 16.9344MHz, or input of 33.8688MHz.
54	XTAO	O	X'tal oscillation circuit output of 16.9344MHz.
55	XTSL	I	X'tal selection input terminal. Set to "L" when x'tal is 16.9344MHz, and to "H" when 33.8688MHz.
56	FSTT	O	2/3 division output of terminals 53 and 54. Does not vary as pitch varies.
57	C4M	O	4.2336MHz output. Varies as pitch varies.
58	C16M	O	16.9344MHz output. Varies as pitch varies.
59	MD2	I	Digital-out ON/OFF control. Turns on when "H", and off when "L".
60	DOUT	O	Digital-out output terminal.
61	EMPH	O	Outputs "H" when playing disc has emphasis, and "L" when the latter does not.
62	WFCK	O	WFCK (Write Frame Clock) output.
63	SCOR	O	Outputs "H" when sub-code sync S0 or S1 is detected.
64	SBSO	O	Serial output of Sub P ~ W.
65	EXCK	I	Clock input for SBSO read out.
66	SQSO	O	Sub Q 80-bit and PCM peak, and level data 16-bit output.
67	SQCK	I	Clock input for SQSO read out.
68	MUTE	I	Mutes when "H", and resets when "L".
69	SENS	-	Outputs SENS to CPU.
70	XRST	I	Resets system when "L".
71	DATA	I	Inputs serial data from CPU.
72	XLAT	I	Latches serial data when latch input from CPU falls.
73	VDD	-	Power supply (+5V).
74	CLOCK	I	Serial data transfer clock input from CPU.
75	SEIN	I	Input SENS from SSP.
76	CNIN	I	Inputs signals for counting number of track jumps.
77	DATO	O	Outputs serial data to SSP.
78	XLTO	O	Outputs serial data latch to SSP, and latches at fall.
79	CLKO	O	Outputs serial data transfer clock to SSP.
80	MIRR	I	Inputs mirror signal. Auto sequencer uses this for jumping 128 or more tracks.

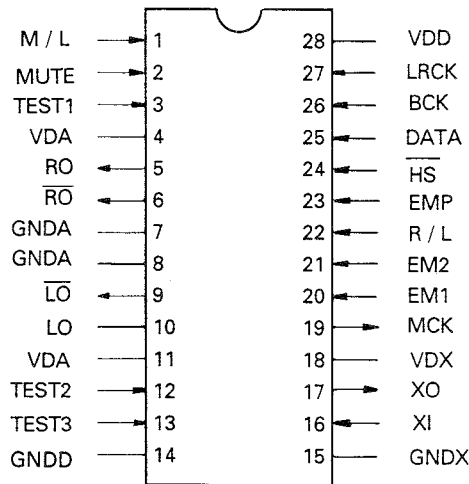
### Notes

- The 64-bit slot is 2's compliment output of LSB first, and the 48-bit slot is 2's compliment output of MSB first.
- GTOP is used to monitor the protective condition of the frame sync. ("H" : Sync protective window is released.)
- XUGF is the frame sync obtained from the EFM signal, which is a negative pulse. This is the signal before the protection of sync.
- XPLCK is the inverted clock of EFM PLL. PLL is so made that the falling edge will be matched to the change point of the EFM signal.
- The GFS becomes "H" when the frame sync is matched to the internal protection timing.
- RFCK is a signal having the period of 136 $\mu$  obtained by the accuracy of X'tal.
- C2P0 is a signal indicating the error condition of data.
- XRAOF is a signal generated when 32 KRAM exceeds the jitter margin of  $\pm 28F$ .

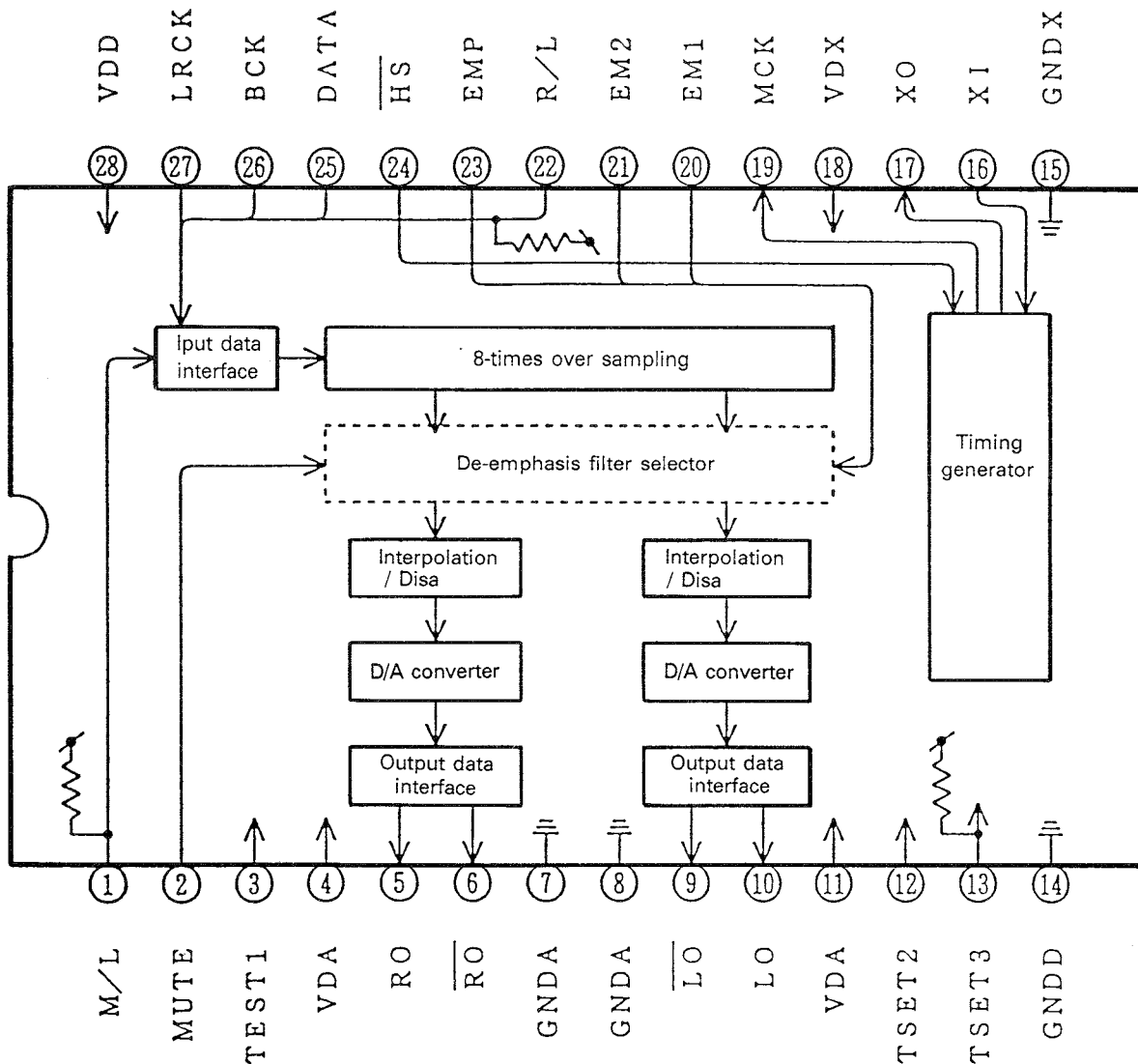
## CIRCUIT DESCRIPTION

### 6. D/A Converter : TC9237N (IC4)

#### 6-1. Terminal connection diagram



#### 6-2. Block diagram



## CIRCUIT DESCRIPTION

### 6-3. Explanation of terminals

Pin No.	Pin name	I/O	Function																				
1	M/L	I	Selection of MSB first or LSB first. H = MSB, L = LSB.																				
2	MUTE	I	Muting control. H = Mute ON																				
3	TEST1	I	Test terminal (connect to H level).																				
4	VDA	-	Power supply for analog circuit (R-ch).																				
5	RO	O	R-ch data output.																				
6	$\overline{RO}$	O	Inverted R-ch output.																				
7	GNDA	-	Ground for analog circuit (R-ch).																				
8	GNDA	-	Ground for analog circuit (L-ch).																				
9	LO	O	Inverted L-ch data output.																				
10	LO	O	L-ch data output.																				
11	VDA	-	Power supply for analog circuit (L-ch).																				
12	TEST2	I	Test terminal (connect to L level).																				
13	TEST3	I	Test terminal (connect to H level or open circuit).																				
14	GND	-	Ground for logic.																				
15	GNDX	-	Ground for oscillation.																				
16	XI	I	Generation of clock freq (384fs).																				
17	XO	O	Generation of clock freq (384fs).																				
18	VDX	-	Power supply for oscillation.																				
19	MCK	O	Clock output of system (384fs).																				
20, 21	EM1, 2	I	De-emphasis filter selector.																				
			<table border="1"> <tr> <td>EM1</td> <td>L</td> <td>L</td> <td>H</td> <td>H</td> </tr> <tr> <td>EM2</td> <td>L</td> <td>H</td> <td>H</td> <td>L</td> </tr> <tr> <td>Mode</td> <td colspan="2">44.1kHz</td> <td>32kHz</td> <td>48kHz</td> </tr> </table>	EM1	L	L	H	H	EM2	L	H	H	L	Mode	44.1kHz		32kHz	48kHz					
EM1	L	L	H	H																			
EM2	L	H	H	L																			
Mode	44.1kHz		32kHz	48kHz																			
22	R / L	I	R / L-ch data selector.																				
			<table border="1"> <tr> <td>R / L</td> <td colspan="4">LRCK</td> </tr> <tr> <td></td> <td colspan="2">LOW</td> <td colspan="2">HIGH</td> </tr> <tr> <td>LOW</td> <td colspan="2">R-ch data</td> <td colspan="2">L-ch data.</td> </tr> <tr> <td>HIGH</td> <td colspan="2">L-ch data</td> <td colspan="2">R-ch data.</td> </tr> </table>	R / L	LRCK					LOW		HIGH		LOW	R-ch data		L-ch data.		HIGH	L-ch data		R-ch data.	
R / L	LRCK																						
	LOW		HIGH																				
LOW	R-ch data		L-ch data.																				
HIGH	L-ch data		R-ch data.																				
23	EMP	I	De-emphasis filter ON / OFF selector (H = ON, L = OFF).																				
24	HS	I	Normal or Double speed selector (H = Normal, L = Double).																				
25	DATA	I	Data input.																				
26	BCK	I	Bit clock input.																				
27	LRCK	I	LR clock input.																				
28	V <sub>DD</sub>	-	Power supply for logic.																				

## MECHANISM OPERATION DESCRIPTION

### Mechanism Operation Description

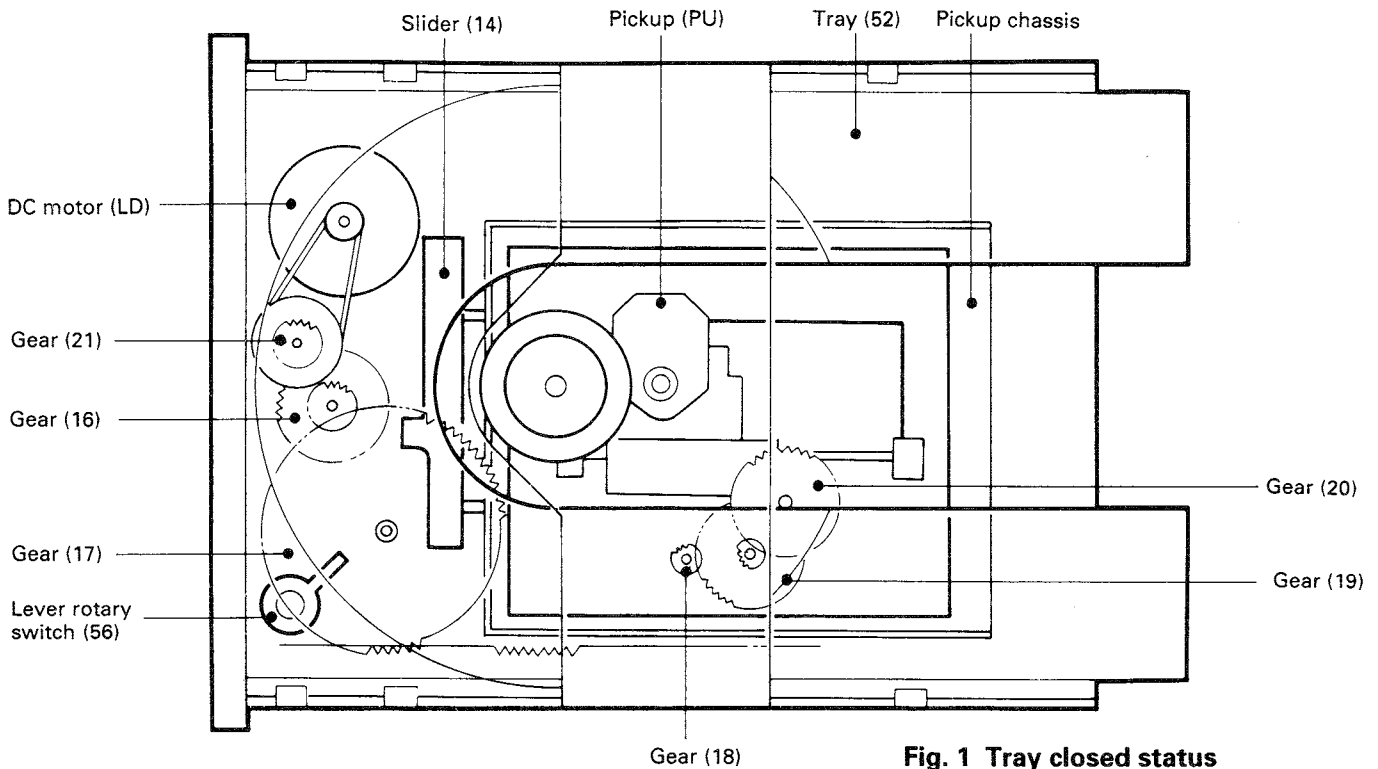
Fig. 1 shows the relationship of mechanisms in the STOP mode. The OPEN/CLOSE operation of the mechanism and the UP/DOWN operation of the pickup chassis when loading the disc are description below.

**Note 1 :** The black arrow (OPEN) and the white arrow (CLOSE) in the operation description have the following meanings :

**Black arrow (OPEN) :** Tray opening direction  
(Tray OPEN)

**White arrow (CLOSE) :** Tray closing direction  
(Tray CLOSE)

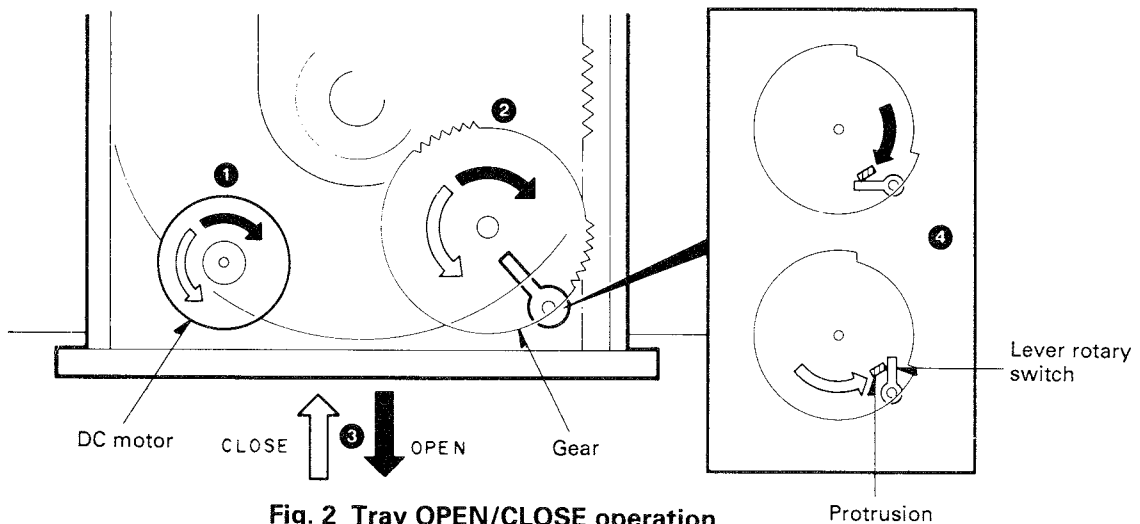
**Note 2 :** Figures in the bracket ( ) in the operation description or accompanied with the part name in the diagram show the reference numbers in the Exploded View.



**Fig. 1 Tray closed status**

### 1. Tray OPEN/CLOSE Operation

By the rotation of the motor (1), the gear (2) is rotated and the tray starts OPEN/CLOSE (3) operation. The OPEN/CLOSE operation stops when the protrusion of the gear comes in contact with the detection switch (4).



**Fig. 2 Tray OPEN/CLOSE operation**

## MECHANISM OPERATION DESCRIPTION

### 2. Pickup Chassis UP/DOWN Movement

Accompanied with the OPEN/CLOSE operation, the lever is shifted (2) by the rotation of the gear (1). Along with the grooves in the lever, the pickup chassis moves up and down (3).

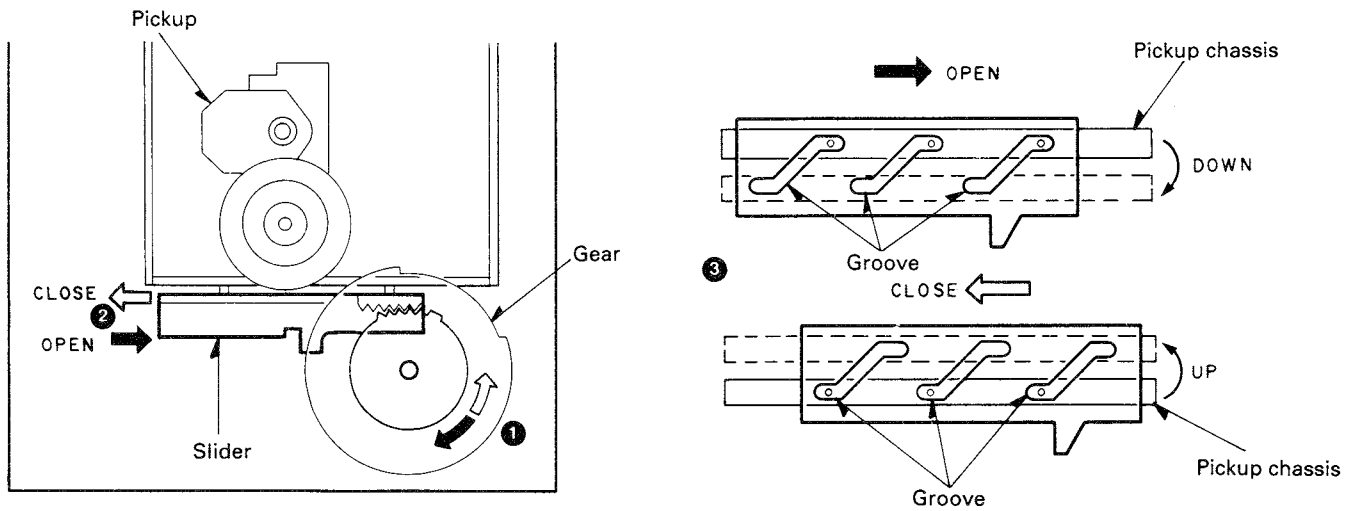


Fig. 3 Pickup chassis UP/DOWN movement

### 3. Gear Installing Position

When re-installing the gear after removing it, attach the gear at the position (A) shown in the condition when the pickup chassis has been lowered.

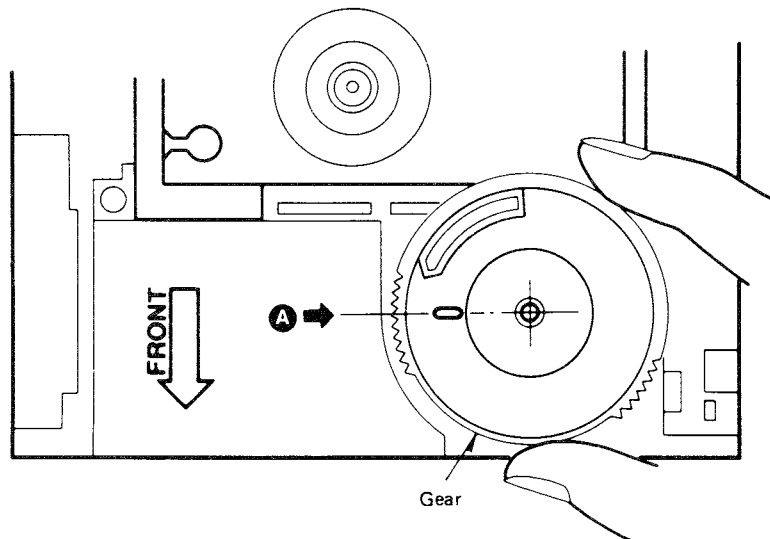


Fig. 4 Gear installing position

## ADJUSTMENT

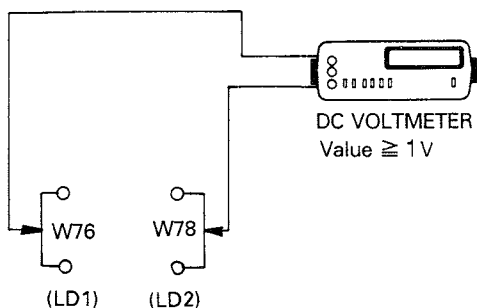
No.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINT	ALIGN FOR	FIG.
1	LASER POWER	—	Connect DC voltmeter to W76 and W78.	Short-circuit pins TEST and turn the power on to enter the test mode. Press the CHECK key. Then, confirm that the display is "03".	—	value $\geq 1.0V$ Grating is correctly aligned with the RF level of 1.5Vp-p or more and the TE (servo open) level of 1.5Vp-p or more. the pickup is acceptable.	(a)
2	TRACKING ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1: RF (CN1-1) CH2: TE (CN1-6)	Press the OPEN/CLOSE key to open the tray. Reset to TEST mode. Then, press the CHECK key. Confirm that the display is "03".	TE BALANCE VR2	Symmetry between upper and lower patterns, or DC=0 $\pm$ 0.05V	(c)
3	FOCUS ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1: RF (CN1-1) CH2: TE (CN1-6)	Press the PLAY key. Confirm that the display is "05".	FE BALANCE VR1	Optimum eyepattern	(d)
4	FOCUS GAIN	Test disc Type 4 Apply signal of 1kHz, 0.1Vrms to CN1 pin 2 and 3.	Connect a LPF to CN1 pin 2-3, to which connect an oscilloscope or two AC voltmeters.	Press the PLAY key. Confirm that the display is "05".	FOCUS GAIN VR3	Two VTVMs should read the same value.	(e)
5	TRACKING GAIN	Test disc Type 4 Apply signal of 1.0kHz, 0.1Vrms to CN1 pin 5 and 6.	Connect a LPF to CN1 pin 5-6, to which connect an oscilloscope or two AC voltmeters.	Press the PLAY key. Confirm that the display is "05".	TRACKING GAIN VR4	Two VTVMs should read the same value.	(e)

(NOTE) Type 4 disc : SONY YEDS-18 TEST DISC or equivalent.

LPF: around 47kohms+390pF or so.

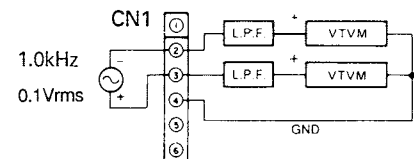
Adjustment procedures are in TEST MODE.

### (a) Laser Power

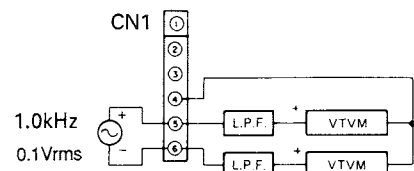


### (e) Focus Gain and Tracking Gain

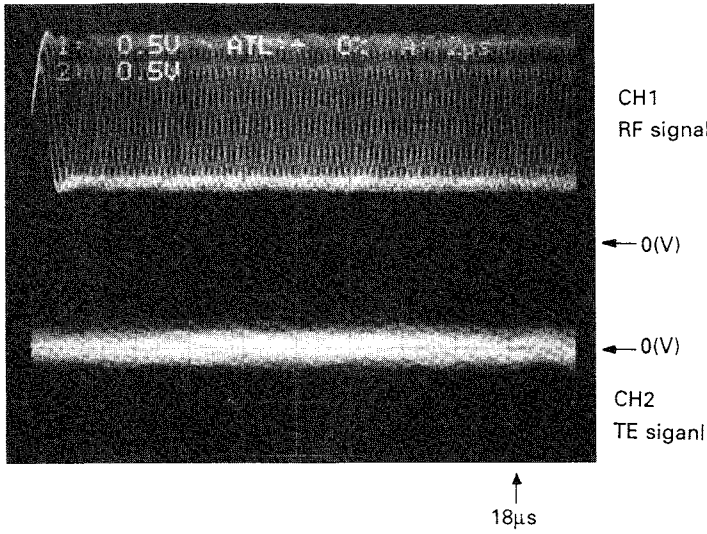
#### Focus gain



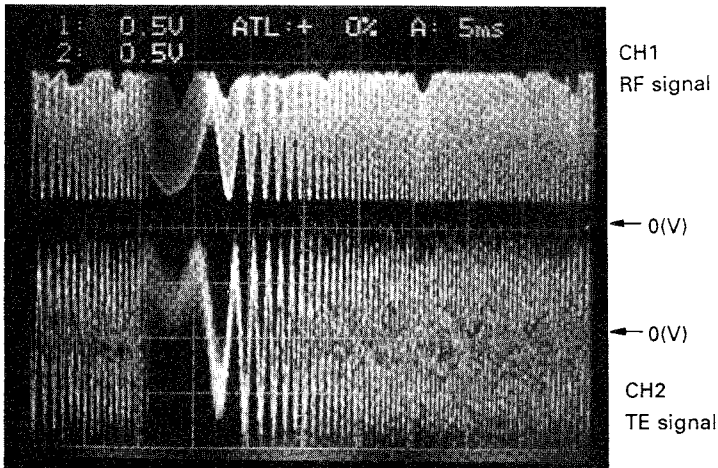
#### Tracking gain



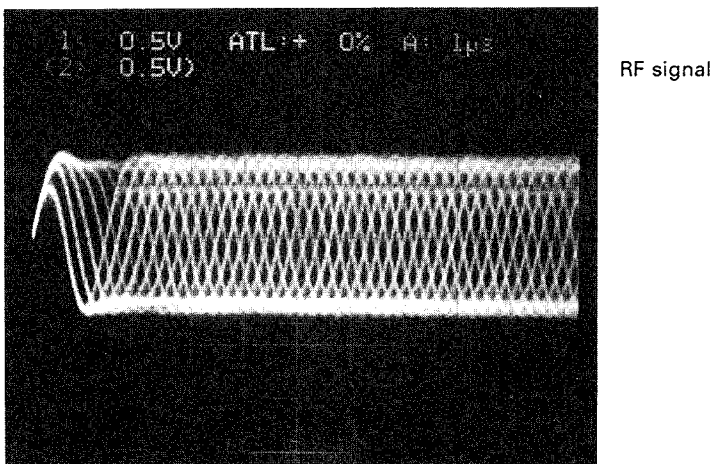
## ADJUSTMENT



- RF signal and E.Spot signal in test mode (PLAY).
- If the diffraction grating has been adjusted properly, the influence of triggering is observed on the E.Spot waveform of approx. 18μs after RF signal, in the form of a projection.



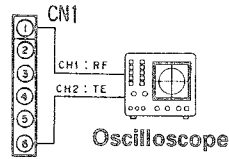
- RF signal and T.Error signal; in test mode (Focusing ON). (Disc type 4)
- Adjust T.Error so that the waveform is symmetrical above and below 0V. (VR 2)



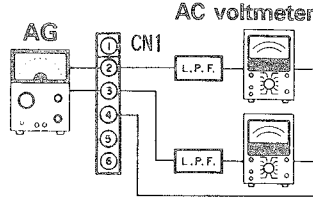
- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset adjustments so that each of the center cross points are focused into one point on the display. The crossing points above and below the center shall also be displayed clearly.

# PC BOARD (COMPONENT SIDE VIEW)

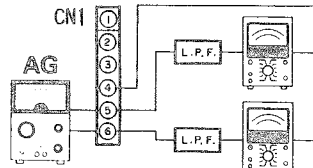
(a) Laser power : Value  $\geq 1.0V$  Grating is correctly aligned with the RF level of 1.5Vp-p or more and the TE (servo open) level of 1.5Vp-p or more, the pickup is acceptable.



(c) Tracking error Balance : Symmetry between upper and lower patterns, or  $DC=0\pm 0.05V$

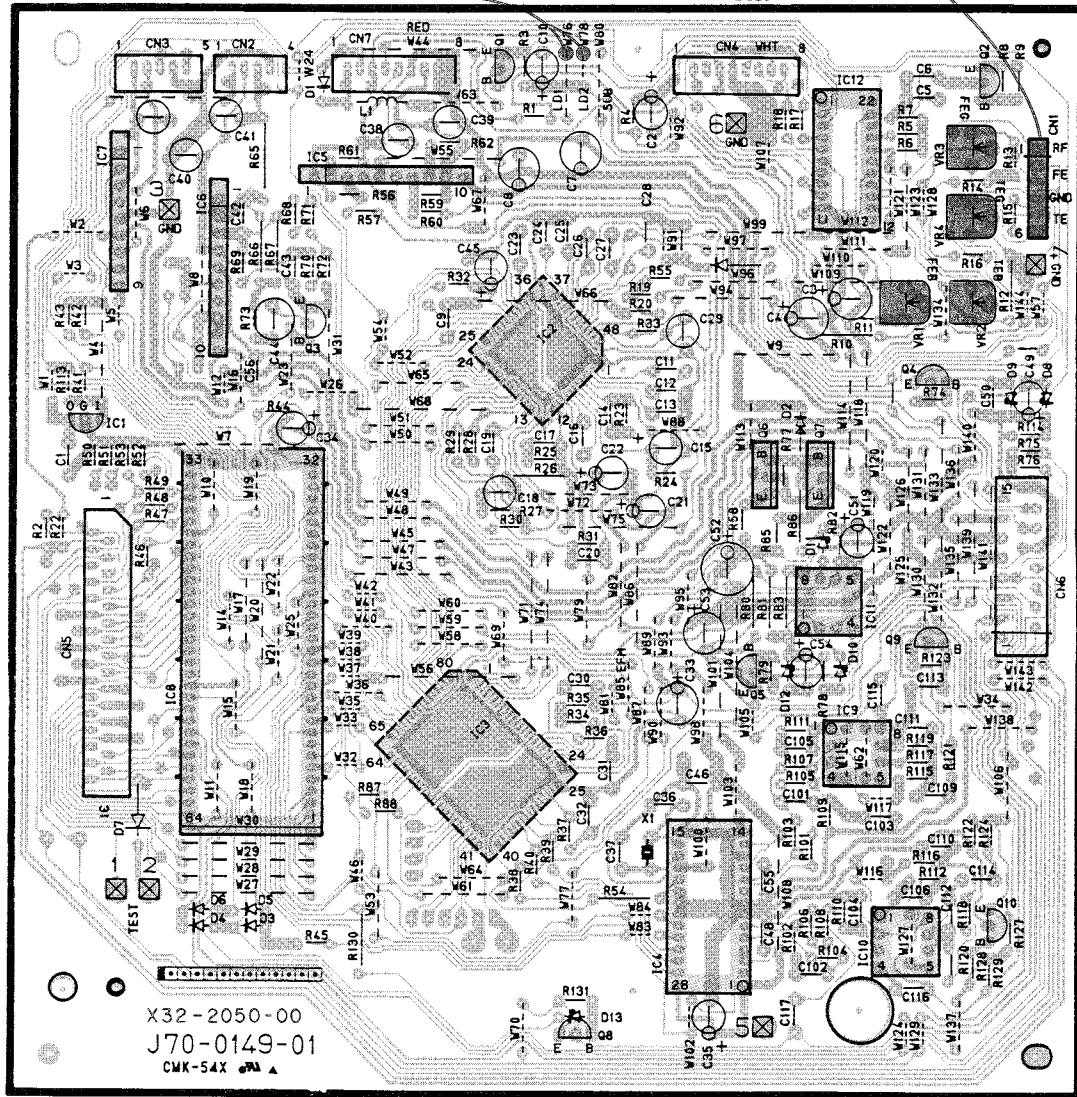


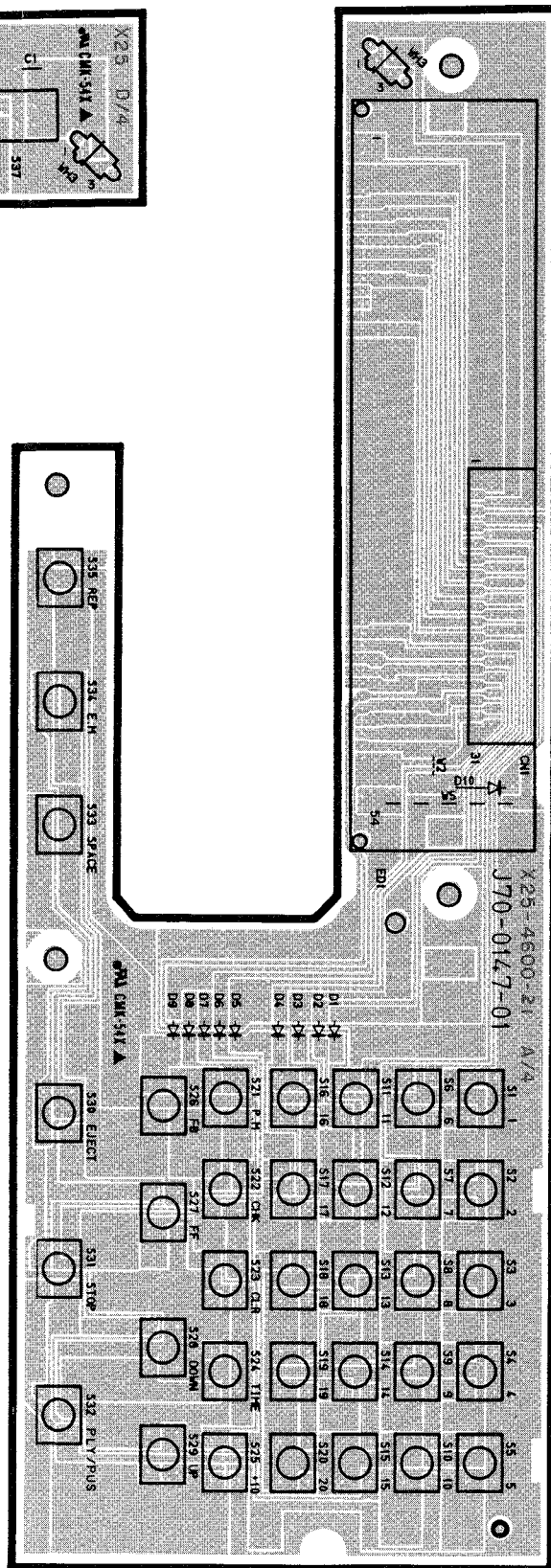
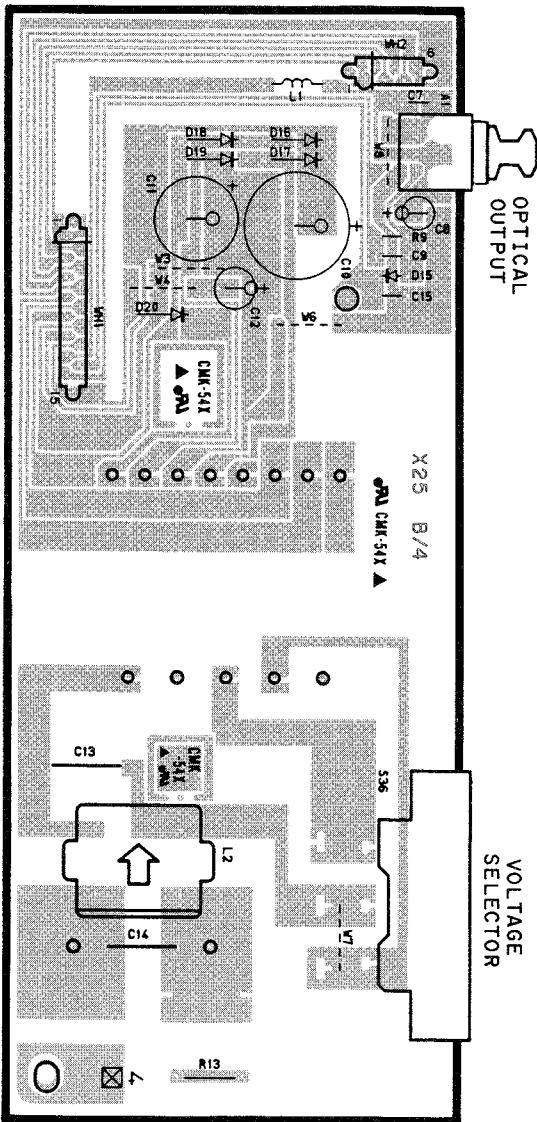
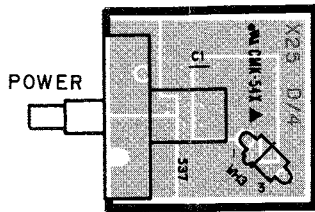
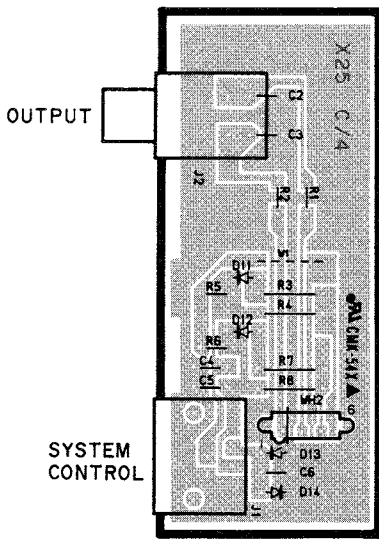
(d) Focus error Balance : Optimum eye-pattern



(e) Focus Gain : Two VTVMs should read the same Value.

(e) Tracking Gain : Two VTVMs should read the same value.



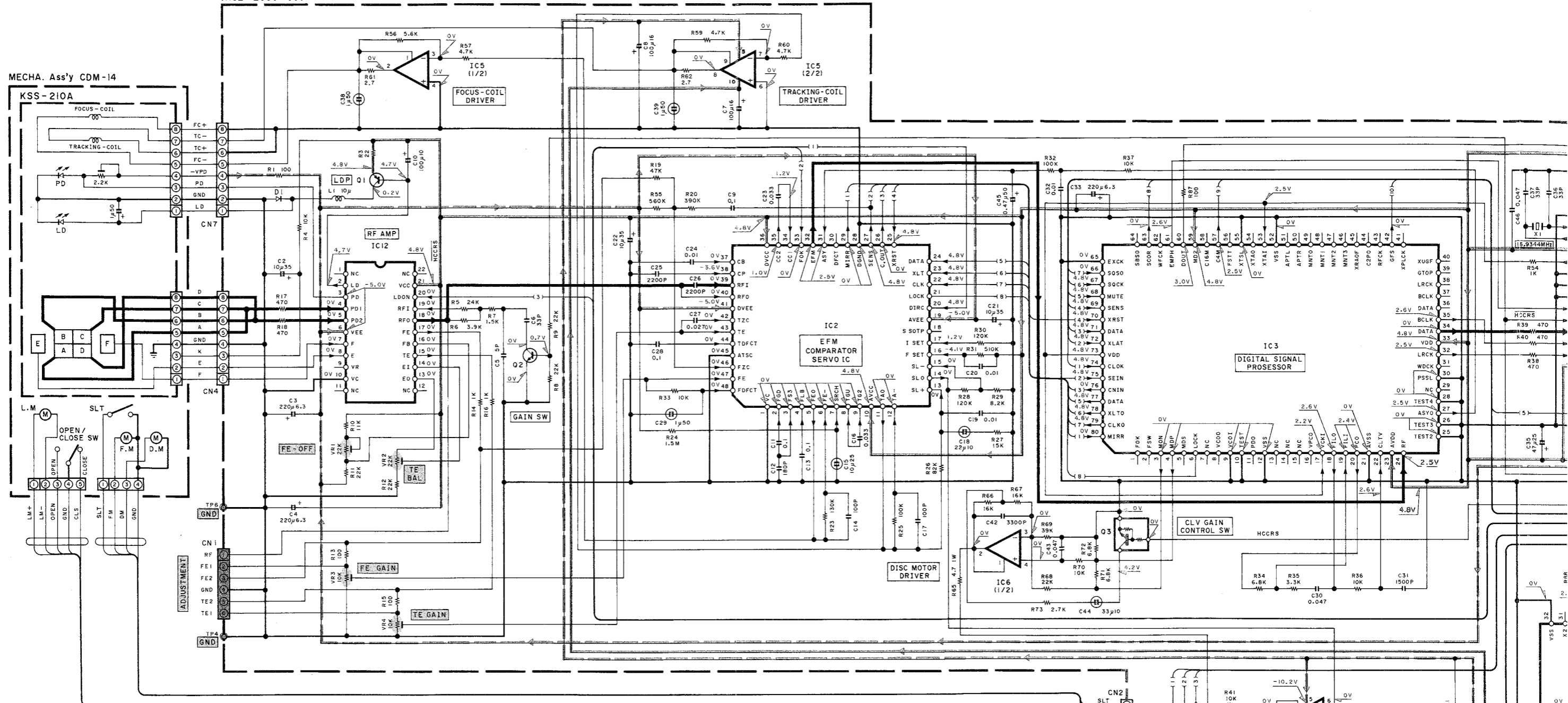


Refer to the schematic diagram for the values of resistors and capacitors.

MECHA. Ass'y CDM-14

KSS-210A

(X32-2050-00)



(X32-2050-00)

- IC 1 : PST529D
- IC 2 : CXA1372Q
- IC 3 : CXD2500AQ
- IC 4 : TC9237N
- IC 5, 6 : LA6510 or TA8410AK
- IC 7 : TA8409S
- IC 8 :  $\mu$ PD75216ACW-C26
- IC 9, 10 : NJM4565D or RC4565D
- IC 11 : NJM4558D
- IC 12 : CXA1571S

- Q1, 5 : 2SA1534A
- Q2 : 2SC1923(R,O)
- Q3 : DTC124ES or UN4212
- Q4 : 2SA954(L,K)
- Q6, 7 : 2SD1944(J,K)
- Q8 : 2SC1740S(Q,R) or 2SC3311A(Q,R)
- Q9, 10 : 2SC2878(B)

- D1, 3-7 : HSS104 or ISS133
- D2 : MA27W(A)
- D8, 13 : HZS6.8N(B2) or RD6.8ES(B2)
- D9 : HZS30N(B) or RD30ES(B)
- D10-12 : HZS5.1S(B2) or RD5.1JS(B2)

2SA1534A 2SA954  
2SC1923 2SC2878

DTC124ES  
2SC1740

2SD1944

UN4212  
2SC3311A

NJM4558D  
NJM4565D

TA8409S

RC4565D

LA6510  
TA8410AK

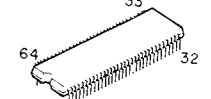
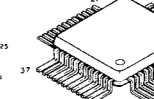
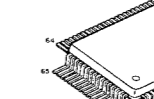
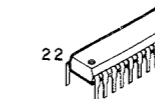
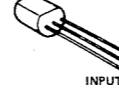
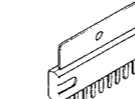
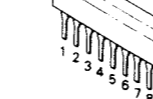
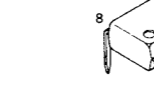
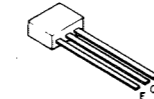
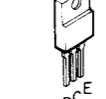
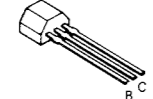
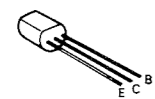
PST529D

CXA1571S

CXD2500AQ

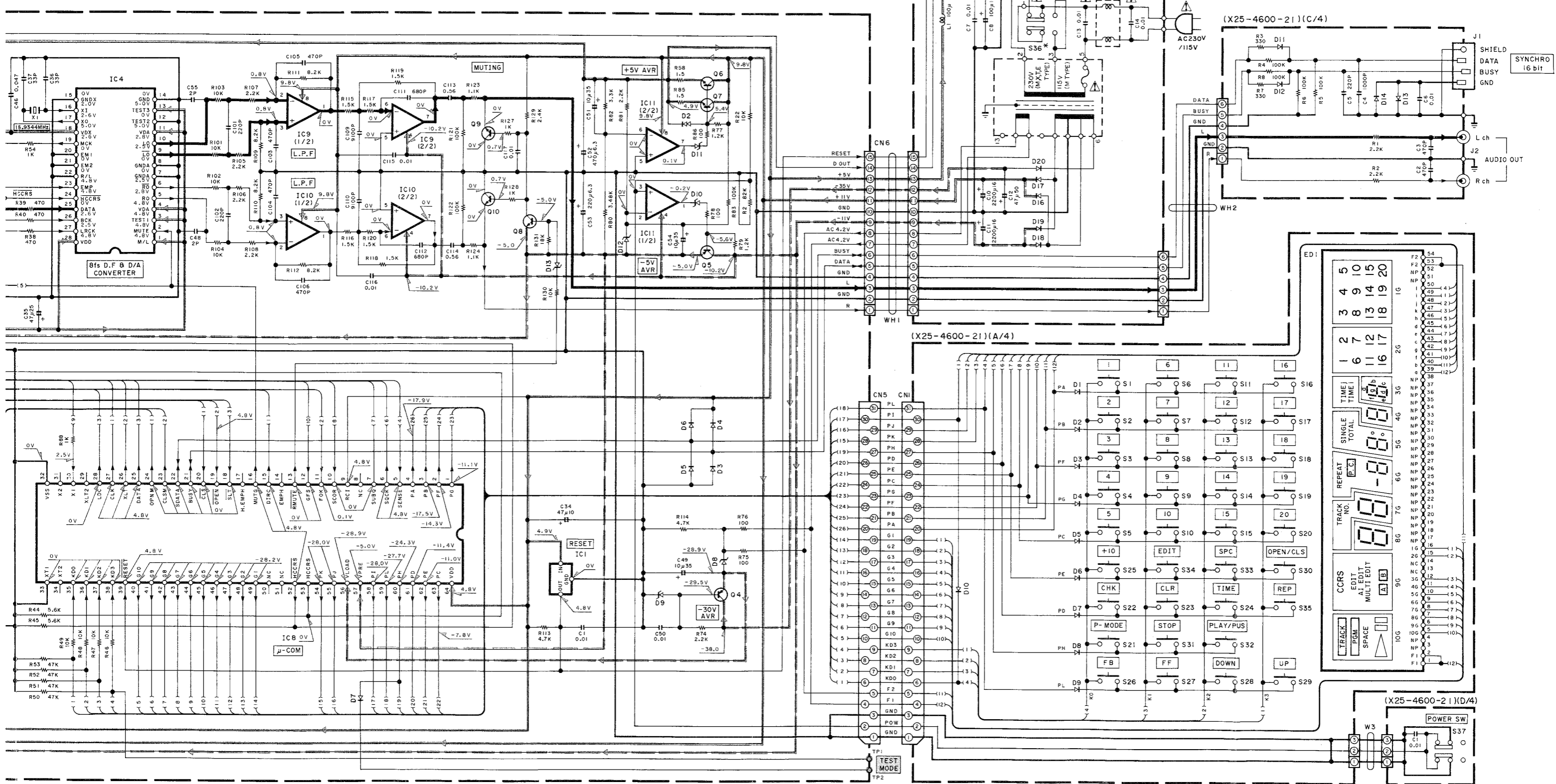
CXA1372Q

$\mu$ PD75216ACW-C26



	M TYPE	X,T,E TYPE
JAPAN MADE	X25-4600-21/X32-2050-00	X25-4602-71/X32-2050-00
SINGAPORE MADE	X25-4610-20/X32-2060-20	X25-4612-71/X32-2060-20
FRA N C E MADE	X25-4662-70/X32-2082-70	-

— SIGNAL LINE  
 — GND LINE  
 — +B LINE  
 — -B LINE



(X25-4600-21)(B/4)

(X25-4600-21)(C/4)

(X25-4600-21)(A/4)

(X25-4600-21)(D/4)

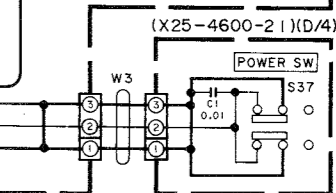
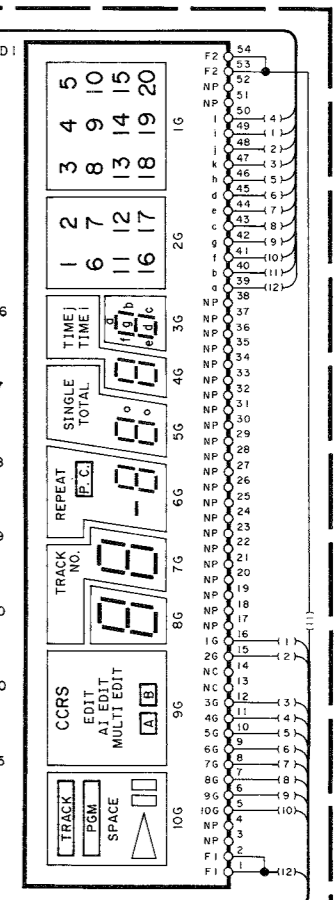
M	X,T,E	TYPE
W7*	X	O
S36*	O	X
VOLTAGE	230V	230V

ED1 : IO-BT-676K

SHIELD  
 DATA  
 BUSY  
 GND

SYNCHRO  
 16 bit

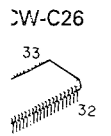
L ch  
 R ch



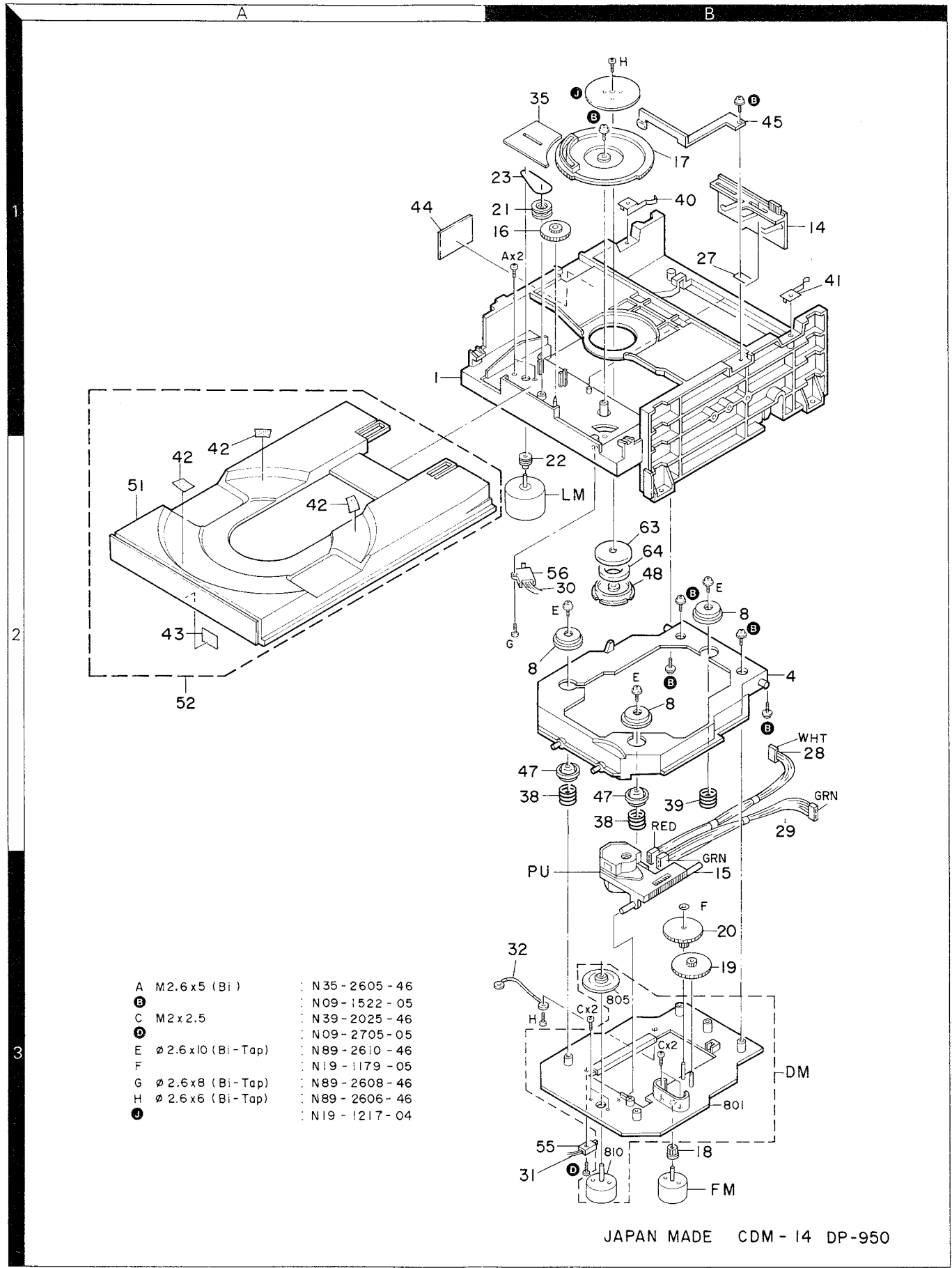
**CAUTION :** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚡ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

\* DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

DP-950 (M)



# EXPLODED VIEW (MECHANISM) : JAPAN MADE



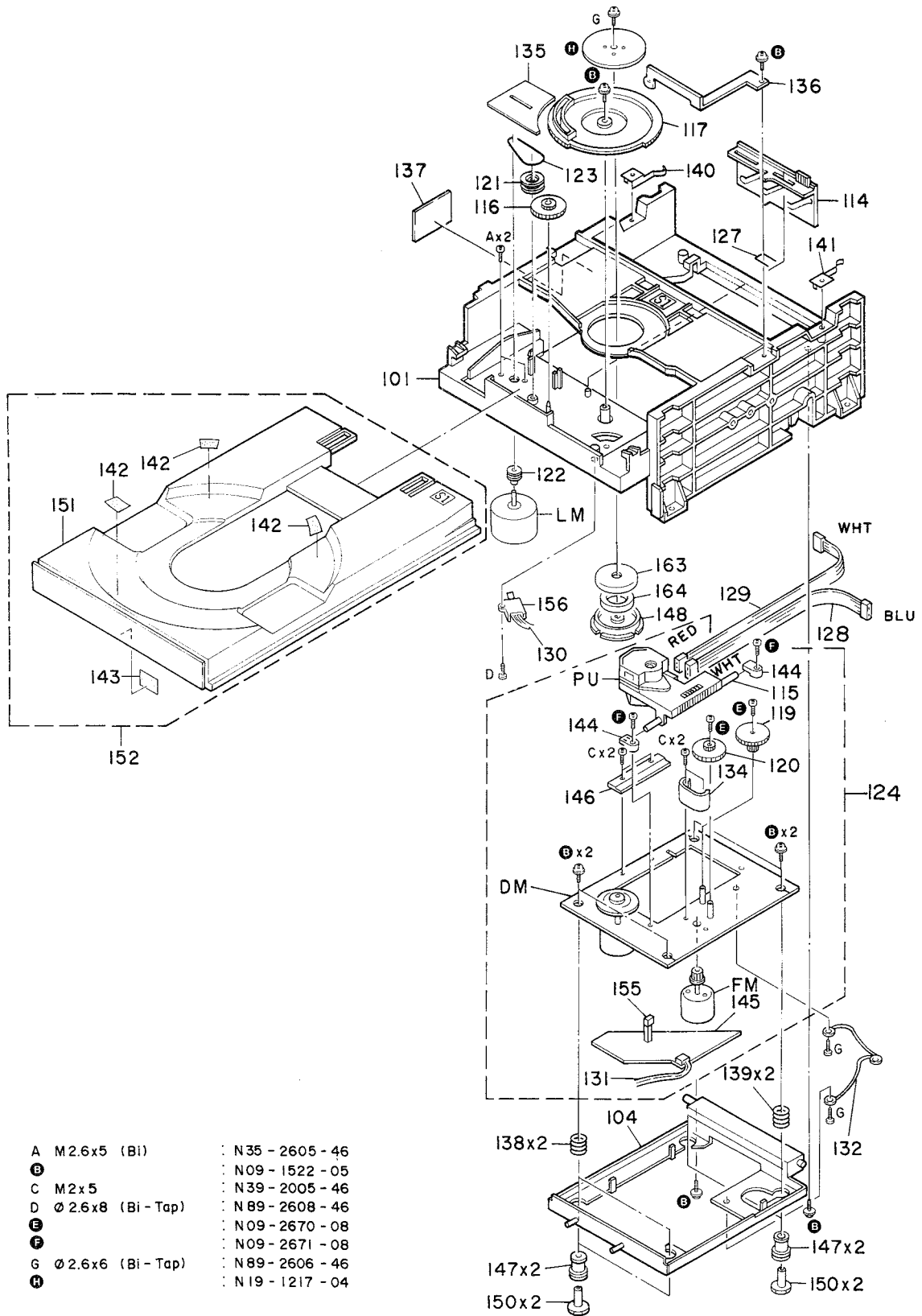
- |   |                   |                   |
|---|-------------------|-------------------|
| A | M2.6x5 (Bi)       | : N35 - 2605 - 46 |
| B |                   | : N09 - 1522 - 05 |
| C | M2x2.5            | : N39 - 2025 - 46 |
| D |                   | : N09 - 2705 - 05 |
| E | ∅ 2.6x10 (Bi-Tap) | : N89 - 2610 - 46 |
| F |                   | : N19 - 1179 - 05 |
| G | ∅ 2.6x8 (Bi-Tap)  | : N89 - 2608 - 46 |
| H | ∅ 2.6x6 (Bi-Tap)  | : N89 - 2606 - 46 |
| J |                   | : N19 - 1217 - 04 |

JAPAN MADE CDM - 14 DP-950

Parts with the exploded numbers larger than 700 are not supplied.

# DP-950

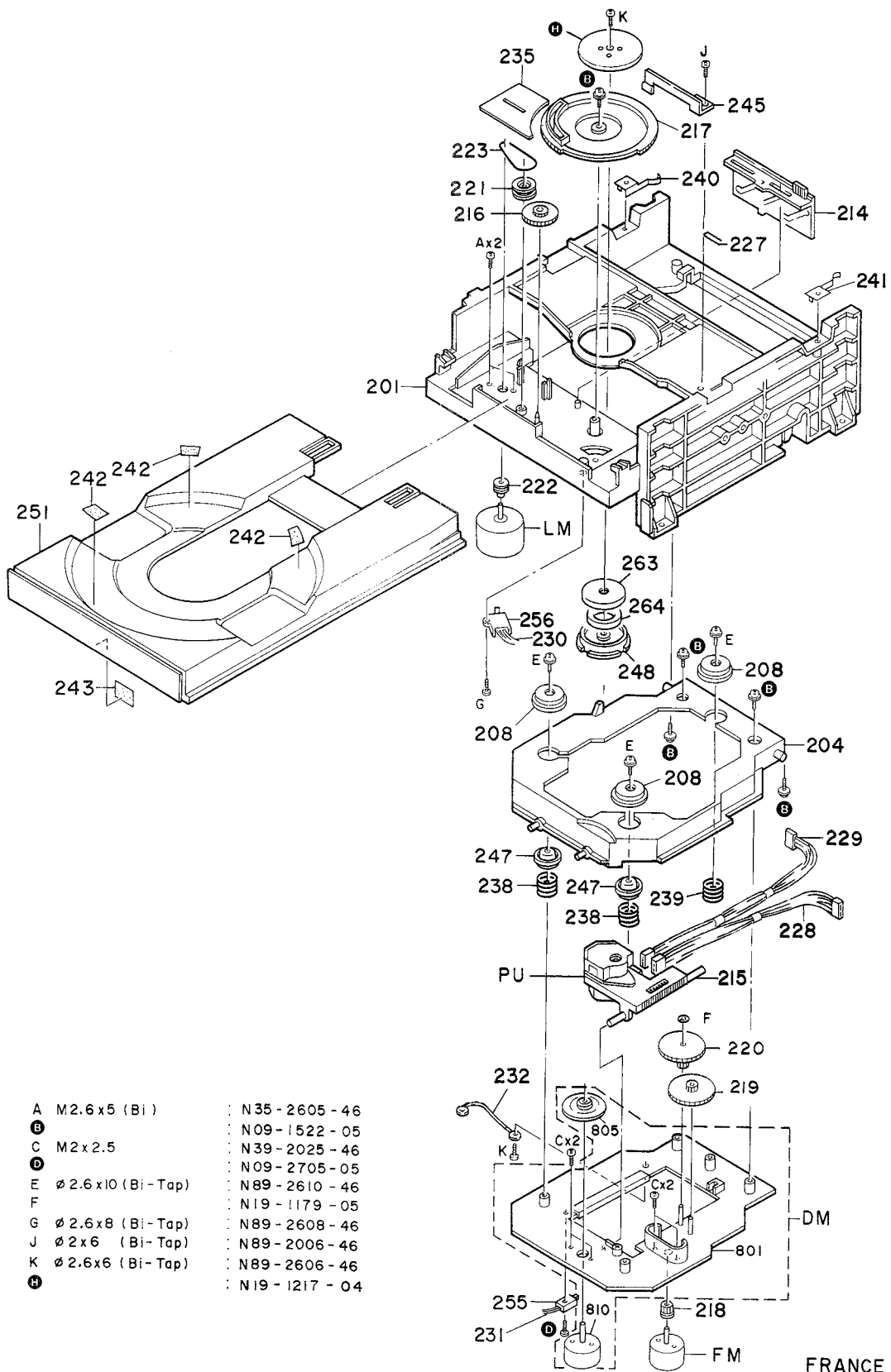
## EXPLODED VIEW (MECHANISM) : SINGAPORE MADE



A	M2.6x5 (Bi)	: N35 - 2605 - 46
B	M2x5	: N09 - 1522 - 05
C	Ø 2.6x8 (Bi-Tap)	: N39 - 2005 - 46
D	M2.6x6 (Bi-Tap)	: N89 - 2608 - 46
E		: N09 - 2670 - 08
F		: N09 - 2671 - 08
G		: N89 - 2606 - 46
H		: N19 - 1217 - 04

CDM-I4SA  
(FOR SINGAPORE)  
DP-950

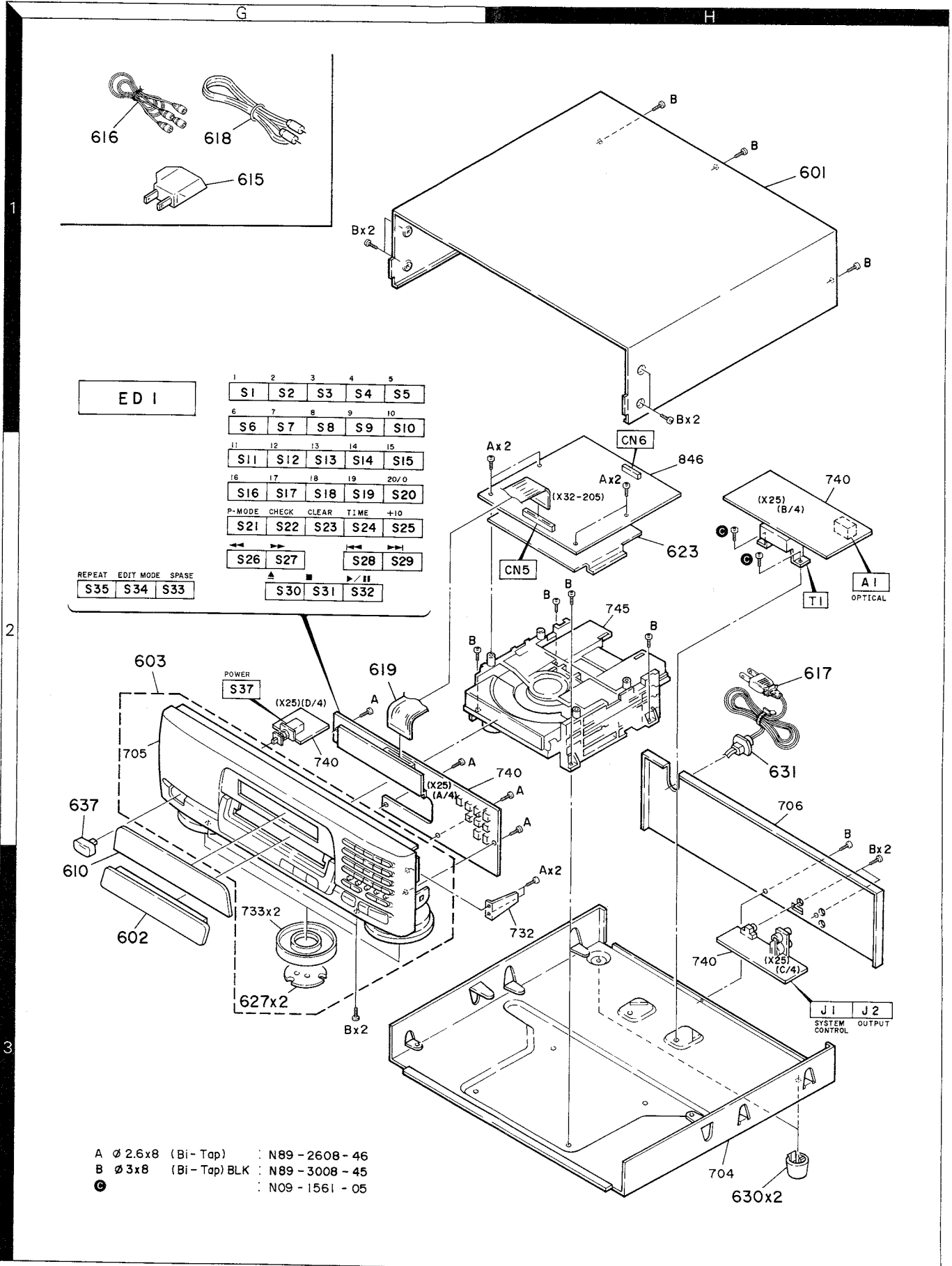
## EXPLODED VIEW (MECHANISM) : FRANCE MADE



A	M2.6x5 (Bi)	: N35-2605-46
B		: N09-1522-05
C	M2x2.5	: N39-2025-46
D		: N09-2705-05
E	∅ 2.6x10 (Bi-Tap)	: N89-2610-46
F		: N19-1179-05
G	∅ 2.6x8 (Bi-Tap)	: N89-2608-46
J	∅ 2x6 (Bi-Tap)	: N89-2006-46
K	∅ 2.6x6 (Bi-Tap)	: N89-2606-46
H		: N19-1217-04

FRANCE MADE  
CDM - 14  
DP-950

## EXPLODED VIEW (UNIT)



## PARTS LIST

\* New Parts  
 Parts without Parts No. are not supplied.  
 Les articles non mentionnés dans le Parts No. ne sont pas fournis.  
 Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕	Re- marks 備考
△ 615	1G	E03-0115-05	AC PLUG ADAPTER	M	
△ 616	1G	E30-0505-05	AUDIO CORD	X	
△ 617	2H	E30-2275-05	AC POWER CORD	M	
△ 617	2H	E30-2277-05	AC POWER CORD	X	
△ 617	2H	E30-2601-05	AC POWER CORD	T	
618	1G	E30-2628-05	CORD WITH CONNECTOR		
619	2G	E31-4937-05	WIRING HARNESS		
623	2H	* F09-0076-04	SHEET		
627	3G	G11-1391-04	SOFT TAPE		
-	-	H10-5174-02	POLYSTYRENE FOAMED FIXTURE	MXTE	S
-	-	H10-5175-02	POLYSTYRENE FOAMED FIXTURE	MXTE	S
-	-	H10-5208-02	POLYSTYRENE FOAMED FIXTURE	E	F
-	-	H10-5209-02	POLYSTYRENE FOAMED FIXTURE	E	F
-	-	H20-0564-04	PROTECTION COVER	M	
-	-	H25-0232-04	PROTECTION BAG (235X350X0.03)		
-	-	H25-0361-04	PROTECTION BAG	XTE	
-	-	H50-0131-04	ITEM CARTON CASE	MXTE	S
-	-	H50-0172-04	ITEM CARTON CASE	E	F
△ 630	3H	J02-1013-05	FOOT		
△ 631	2H	J42-0083-05	POWER CORD BUSHING		
637	2G	* K29-4225-04	KNØB (POWER)		
△ T1	2H	L07-0173-05	POWER TRANSFORMER	XTE	
△ T1	2H	L07-0174-05	POWER TRANSFORMER	M	
A		N89-2608-46	BINDING HEAD TAPITTE SCREW		
B		N89-3008-45	BINDING HEAD TAPITTE SCREW		
C		N09-1561-05	TAPITTE SCREW (3X6,+)		
SUB (X25-4600-21) : JAPAN, (X25-4610-20) : SINGAPORE, (X25-4662-70) : FRANCE					
C1		CK45FF1H103Z	CERAMIC		
C2	3	CK45FB1H471K	CERAMIC		
C4		CK45FB1H102K	CERAMIC		
C5		CC45FSL1H221J	CERAMIC		
C6	7	CK45FF1H103Z	CERAMIC		
C8		CE04KW1A101M	ELECTRØ		
C9		CC45FSL1H101J	CERAMIC		
C10	11	CE04KW1C222M	ELECTRØ		
C12		CE04KW1H470M	ELECTRØ		
△ C13	14	C91-0971-05	FILM		
C15		CK45FF1H103Z	CERAMIC		
J1		E08-0312-05	RECTANGULAR RECEPTACLE(SYS/CON		
J2	3H	E13-2208-05	PHØNØ JACK (2P)		
J2	3H	E13-2208-05	PHØNØ JACK (2P)		
L1		L40-1011-17	SMALL FIXED INDUCTØR(100UH,K)		
△ L2		L79-0785-05	LINE FILTER		
S1	-35	S40-1064-05	PUSH SWITCH (POWER TYPE)		
S36		S31-2131-05	SLIDE SWITCH		
△ S37	2G	S40-2370-05	PUSH SWITCH	M	
D1	-10	HSS104A	DIØDE		
D1	-10	1SS131	DIØDE		
D11	-15	HSS104	DIØDE		
D11	-15	1SS133	DIØDE		

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Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕	Re- marks 備考
DP-950 JAPAN MADE					
601	1H	A01-1988-01	METALLIC CABINET		
602	3G	* A29-0194-03	PANEL (TRAY)		
603	2G	A60-0105-02	PANEL ASSY		
610	3G	B10-1871-03	FRONT GLASS	X	
-	-	B46-0096-23	WARRANTY CARD	E	
-	-	B46-0122-13	WARRANTY CARD	T	
-	-	B46-0143-13	WARRANTY CARD		
-	-	B60-0578-00	INSTRUCTION MANUAL(ENGLISH)		
-	-	B60-0579-00	INSTRUCTION MANUAL(SPANISH)	M	
-	-	B60-0580-00	INSTRUCTION MANUAL(F/G/D/I)	E	
-	-	B60-0657-00	INSTRUCTION MANUAL(CHINESE)	M	
△ 615	1G	E03-0115-05	AC PLUG ADAPTER	M	
△ 616	1G	E30-0505-05	AUDIO CORD	X	
△ 617	2H	E30-2588-15	AC POWER CORD	M	
△ 617	2H	E30-2590-15	AC POWER CORD	X	
△ 617	2H	E30-2601-05	AC POWER CORD	ME	
618	1G	E30-2628-05	CORD WITH CONNECTOR	T	
619	2G	E31-4937-05	WIRING HARNESS		
623	2H	* F09-0075-14	SHEET		
627	3G	G11-1391-04	SOFT TAPE		
-	-	H10-5172-02	POLYSTYRENE FOAMED FIXTURE		
-	-	H10-5173-02	POLYSTYRENE FOAMED FIXTURE		
-	-	H20-0564-04	PROTECTION COVER	M	
-	-	H25-0232-04	PROTECTION BAG (235X350X0.03)		
-	-	H25-0361-04	PROTECTION BAG	XTE	
-	-	H50-0130-04	ITEM CARTON CASE		
630	3H	J02-1013-05	FOOT		
△ 631	2H	J42-0083-05	POWER CORD BUSHING	T	
637	2G	* K29-4225-04	KNØB (POWER)		
△ T1	2H	L07-0173-05	POWER TRANSFORMER	XTE	
△ T1	2H	L07-0174-05	POWER TRANSFORMER	M	
A		N89-2608-46	BINDING HEAD TAPITTE SCREW		
B		N89-3008-45	BINDING HEAD TAPITTE SCREW		
C		N09-1561-05	TAPITTE SCREW (3X6,+)		
DP-950 SINGAPORE & FRANCE MADE					
601	1H	A01-1964-01	METALLIC CABINET		
602	3G	* A29-0194-03	PANEL		
603	2G	A60-0107-02	PANEL ASSY		
610	3G	B10-1871-03	FRONT GLASS	X	
-	-	B46-0096-23	WARRANTY CARD	E	
-	-	B46-0122-13	WARRANTY CARD	E	
-	-	B46-0139-03	WARRANTY CARD	E	
-	-	B46-0143-13	WARRANTY CARD	T	
-	-	B60-0578-00	INSTRUCTION MANUAL(ENGLISH)		
-	-	B60-0579-00	INSTRUCTION MANUAL(SPANISH)	M	
-	-	B60-0580-00	INSTRUCTION MANUAL(F/G/D/I)	E	
-	-	B60-0657-00	INSTRUCTION MANUAL(CHINESE)	M	

L=Scandinavia  
 Y=PX(Far East, Hawaii)  
 Y=AAFE(S)(Europe)

K=USA  
 T=England  
 X=Australia  
 P=Canada  
 E=Europe  
 M=Other Areas

S=SINGAPORE MADE  
 F=FRANCE MADE

△ indicates safety critical components.

x New Parts  
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3

Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部 品 名 / 規 格	Desti- nation 仕 向	Re- marks 備考
D16 -20 D16 -20 E01	1G	S5688B 1SR139-100 10-BT-676K	DIODE DIODE FLUORESCENT INDICATOR TUBE		
A1	2H	* W02-1114-05	OSCILLATING MODULE		
<b>CONTROL (X32-2050-00) : JAPAN, (X32-2082-70) : FRANCE</b>					
C1		CK45FF1H103Z	0.010UF Z		
C2		CE04KW1V100M	100UF		
C3	.4	CE04KW0J221M	35WV		
C5		CC45FSL1H050C	220UF 6.3WV		
C6		CC45FSL1H330J	5.0PF C		
C7	.8	CE04KW1C101M	100UF 16WV		
C9		C092FMIH104J	0.10UF J		
C10		CE04KW1A101M	100UF 10WV		
C11		C092FMIH104J	0.10UF J		
C12		CC45FSL1H181J	180PF J		
C13		C092FMIH104J	0.10UF J		
C14		C092FMIH101K	100PF K		
C15		C90-1332-05	10UF 25WV		
C16		C092FMIH333J	0.033UF J		
C17		C092FMIH101K	100PF K		
C18		C90-1333-05	22UF 10WV		
C19		C092FMIH103J	0.010UF J		
C20		CK45FF1H103Z	0.010UF Z		
C21	.22	CE04KW1V100M	10UF 35WV		
C23		C092FMIH333J	0.033UF J		
C24		C092FMIH103J	0.010UF J		
C25	.26	C092FMIH222J	2200PF J		
C27		C092FMIH273J	0.027UF J		
C28		C092FMIH104J	0.10UF J		
C29		C90-1349-05	1UF 50WV		
C30		C092FMIH473J	0.047UF J		
C31		C092FMIH152J	1500PF J		
C32		C092FMIH103J	0.010UF J		
C33		CE04KW0J221M	220UF 6.3WV		
C34		CE04KW1A470M	47UF 10WV		
C35		CE04KW1E470M	47UF 25WV		
C36	.37	CC45FSL1H350J	33PF J		
C38	-41	C90-1332-05	100P K		
C42		CK45FB1H332K	3300PF K		
C43		C092FMIH473J	0.047UF J		
C44		C90-1396-05	33UF 10WV		
C45		CE04KW1HR47M	0.47UF 50WV		
C46		CK45FF1H473Z	0.047UF Z		
C48		CC45FSL1H020C	2.0PF C		
C49		CE04KW1V100M	100UF 35WV		
C50		C092FMIH103J	0.010UF J		
C51		CE04KW1V100M	100UF 35WV		
C52		CE04KW0J471M	470UF 6.3WV		
C53		CE04KW0J221M	220UF 6.3WV		
C54		CE04KW1V100M	100UF 35WV		
C55		CC45FSL1H020C	2.0PF C		
C56		C092FMIH104J	0.10UF J		
C101,102		C092FMIH221K	220PF K		
C103-106		C092FMIH471J	470PF J		

L:Scandinavia K:USA P:Canada  
Y:PX(Far East, Hawaii) T:England E:Europe  
X:Australia M:Other Areas

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4

Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部 品 名 / 規 格	Desti- nation 仕 向	Re- marks 備考
C109,110 C111,112 C113,114 C115-117		C092FMIH912J MYLAR C092FMIH681J MYLAR CF92EV1H564J MF C092FMIH103J MYLAR	9100PF J 9100PF J 680PF J 0.56UF J 0.010UF J		
CN5 CN6	2H 1H	E40-4171-05 E40-4244-05	FLAT CABLE CONNECTOR SOCKET FOR PIN ASSY		
L1 X1		L40-1001-17 L77-1164-05	SMALL FIXED INDUCTOR(10UH,K) CRYSTAL RESONATOR		
R65		RS14KB3A4R7J RN RN14BK2C3481F R12-3686-05 R12-3688-05	FL-PROOF RS 4.7 J 1W TRIMMING PGT.(22K) F TRIMMING PGT.(10K)		
D1 D1 D2 D3 -7 D3 -7		HSS104 ISS133 MA27W(A) HSS104 ISS133	DIODE DIODE VARIATOR DIODE DIODE		
D8 D8 D9 D9		HZ56.8N(B2) RD6.8ES(B2) HZ50N(B) RD30ES(B)	ZENER DIODE ZENER DIODE ZENER DIODE ZENER DIODE		
D10 -12 D10 -12		HZ55.1S(B2) RD5.1JS(B2) HZ56.8N(B2) RD6.8ES(B2)	ZENER DIODE ZENER DIODE ZENER DIODE ZENER DIODE		
D13 D13		PST529D IC(XSYSTEM RESET)	IC(SYSTEM RESET)		
IC1 IC2		CXA1372Q	IC(CD RF SERV0)		
IC3 IC4		CXD9500AQ TC9237N	IC(CSIGNAL PROCESSOR) IC		
IC5,6 IC5,6		LA6510 IC8410AK	IC(DUAL POWER OP AMP) IC(POWER OP AMP)		
IC7		TAB409S	IC(MOTOR CONTROL)		
IC8 IC9,10 IC9,10		UPD75216ACW-C26 NJM4565D RC4565D	IC(MICROPROCESSOR) IC(OP AMP X2) IC(OP AMP X2)		
IC11 IC12		NJM4558D CXA1571S	IC(OP AMP X2) IC(CD RF AMP)		
Q1 Q2 Q3 Q4		2SA1534A 2SC1923(R,0) DTC1246S UN4212	TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR		
Q5 Q6,7 Q8 Q8		2SA1534A 2SD1944(J,K) 2SC1746S(Q,R) 2SC331A(Q,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q9,10		2SC2878(B)	TRANSISTOR		
<b>MECHANISM (X92-1371-01) : JAPAN MADE</b>					
1 4	1A 2B	A10-2563-01 A11-0623-08	CHASSIS SUB CHASSIS		
8	2B	B09-0098-08	CAP		
14	1B	D10-2324-03	SLIDER		

L:Scandinavia K:USA P:Canada  
Y:PX(Far East, Hawaii) T:England E:Europe  
X:Australia M:Other Areas

△ indicates safety critical components.

PARTS LIST

## PARTS LIST

x New Parts

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Teile ohne Parts No. werden nicht geliefert.

5

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 向	Re- marks 備考
15	3B		D10-2325-04	ROD		
16	1B		D13-0807-04	GEAR (INTERMEDIATE)		
17	1B		D13-0808-02	GEAR (MAIN)		
18	3B		D13-0809-04	GEAR (MOTOR)		
19	3B		D13-0810-04	GEAR (INTERMEDIATE)		
20	3B		D13-0811-04	GEAR (FEED)		
21	1B		D13-0813-04	GEAR (PULLEY)		
22	2B		D15-0296-04	MOTOR PULLEY		
23	1B		D16-0282-04	BELT		
27	1B		E33-0343-04	TERMINAL (SEFORT)		
28	2B	*	E35-0190-05	WIRING HARNESS (WHITE/RED)		
29	2B	*	E35-0189-05	WIRING HARNESS (GREEN/GREEN)		
30	2B	*	E31-7822-05	WIRING HARNESS (SP)		
31	3B		E31-7230-05	WIRING HARNESS (4P)		
32	3B	*	E35-0233-05	LEAD WIRE		
35	1B		F19-1005-04	BLIND PLATE		
38	2B		G01-2385-08	COMPRESSION SPRING		
39	2B		G01-3514-08	COMPRESSION SPRING		
40	1B		G02-0926-24	FLAT SPRING (L)		
41	1B		G02-0927-04	FLAT SPRING (R)		
42	2A		G16-0739-04	SHEET		
43	2A		G16-0744-04	SHEET		
44	1A		G11-1114-04	CUSHION		
45	1B		G02-0945-14	FLAT SPRING ASSY		
47	2B		J02-1033-05	INSULATOR		
48	2B		J11-0151-05	CLAMPER		
51	2A		J99-0065-11	TRAY		
52	2A		J99-0067-13	TRAY ASSY		
-			N88-3008-45	FLAT HEAD TAPTITE SCREW		
A			N35-2605-46	BINDING HEAD MACHIN SCREW		
B			N09-1522-05	SET SCREW (3X8)		
C			N39-2025-46	PAN HEAD MACHIN SCREW		
D			N09-2705-05	MACHINE SCREW		
E			N89-2610-46	BINDING HEAD TAPTITE SCREW		
F			N19-1179-05	FLAT WASHER		
G			N89-2608-46	BINDING HEAD TAPTITE SCREW		
55	3B		S33-1022-05	LEVER SWITCH		
56	2B		S33-2061-05	LEVER SWITCH		
63	2B		T50-1044-04	YÖKE		
64	2B		T99-0233-05	MAGNET		
DM	3B		A11-0675-08	SUB CHASSIS ASSY (DISC MOTOR)		
FM	3B		T42-0532-05	FEED MOTOR		
LM	2B		T42-0530-05	LOADING MOTOR		
PU	3B		T25-0011-05	OPTICAL PICKUP HEAD (KSS-210A)		
<b>MECHANISM (X92-1410-01) : SINGAPORE MADE</b>						
101	1C		A10-2564-01	CHASSIS		MXTE
104	3D		A11-0625-02	SUB CHASSIS		MXTE
114	1D		D10-0324-03	SLIDER		MXTE
115	2D		D10-2315-04	ROD		MXTE
116	1D		D13-0807-04	GEAR (INTERMEDIATE)		MXTE
117	1D		D13-0808-02	GEAR (MAIN)		MXTE

L:Scandinavia K:USA P:Canada  
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Y:A:AFES(Europe) X:Australia M:Other Areas

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x New Parts

x New Parts

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6

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 向	Re- marks 備考
119	2D		D13-0802-08	GEAR		MXTE
120	2D		D13-0803-08	GEAR (PULLEY)		MXTE
121	1D		D13-0813-04	GEAR (PULLEY)		MXTE
122	2D		D15-0296-04	MOTOR PULLEY		MXTE
123	1D		D16-0284-05	BELT		MXTE
124	2D		D40-0951-05	MECHANISM ASSY		MXTE
127	1D		E33-0343-04	TERMINAL		MXTE
128	2D	*	E35-0190-05	WIRING HARNESS		MXTE
129	2D	*	E35-0191-05	WIRING HARNESS		MXTE
130	2D	*	E31-7823-05	WIRING HARNESS		MXTE
131	3D	*	E31-7235-05	WIRING HARNESS		MXTE
132	3D	*	E35-0234-05	LEAD WIRE		MXTE
134	2D		F07-0554-08	GEAR COVER		MXTE
135	1D		F19-1015-24	BLIND PLATE		MXTE
136	1D		G02-0945-14	FLAT SPRING ASSY		MXTE
137	1C		G11-1114-04	CUSHION		MXTE
138	3D		G01-2394-04	COMPRESSION SPRING		MXTE
139	3D		G01-2395-04	COMPRESSION SPRING		MXTE
140	1D		G02-0967-04	FLAT SPRING (L)		MXTE
141	1D		G02-0968-04	FLAT SPRING (R)		MXTE
142	2C		G16-0743-04	SHEET		MXTE
143	2C		G16-0745-04	SHEET		MXTE
144	2D		J19-3148-08	SHAFT CLAMP		MXTE
145	3D		J25-6135-08	MOTOR PCB		MXTE
146	2D		J90-0640-08	SLIDER HOLDER		MXTE
147	3D		J02-1027-15	INSULATOR		MXTE
148	2D		J11-0130-05	CLAMPER		MXTE
150	3D		J42-0175-04	BUSHING		MXTE
151	2C		J99-0069-11	TRAY		MXTE
152	2C		J99-0070-13	TRAY ASSY		MXTE
A			N35-2605-46	BINDING HEAD MACHIN SCREW		MXTE
B			N09-1522-05	SET SCREW (3X8)		MXTE
C			N35-2005-46	PAN HEAD MACHIN SCREW		MXTE
D			N89-2608-46	BINDING HEAD TAPTITE SCREW		MXTE
E			N09-2670-08	SCREW		MXTE
F			N09-2671-08	SCREW		MXTE
G			N89-2606-46	BINDING HEAD TAPTITE SCREW		MXTE
H			N19-1217-04	FLAT WASHER		MXTE
155	3D		S46-1128-08	LEAF SWITCH		MXTE
156	2D		S33-2061-05	LEVER SWITCH		MXTE
163	2D		T50-1046-04	YÖKE		MXTE
164	2D		T99-0233-05	MAGNET		MXTE
DM	2D		T42-0528-06	DISC MOTOR		MXTE
FM	5D		T42-0527-08	FEED MOTOR		MXTE
LM	2D		T42-0530-05	LOADING MOTOR		MXTE
PU	2D		T25-0011-05	OPTICAL PICKUP (KSS-210A)		MXTE
<b>MECHANISM (X92-1411-01) : FRANCE MADE</b>						
201	1E		A10-2794-01	CHASSIS		E
204	2F		A11-0630-02	SUB CHASSIS		E
208	2F		B09-0099-04	CAP		E

L:Scandinavia K:USA P:Canada  
Y:PX(Far East, Hawaii) T:England E:Europe  
Y:A:AFES(Europe) X:Australia M:Other Areas

△ indicates safety critical components.

PARTS LIST

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\* New Parts  
Parts without Parts No. are not supplied.  
Les articles non mentionnés dans le Parts No. ne sont pas fournis.  
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	Parts New 部品新	Parts No. 部品番号	Description 部品名/规格	Desti- nation 仕	Re- marks 向備考
214	1F		D10-2344-03	SLIDER	E	
215	3F		D10-2325-04	ROD	E	
216	1F		D13-0815-04	GEAR (INTERMEDIATE)	E	
217	1F		D13-0816-02	GEAR (MAIN)	E	
218	3F		D13-0809-04	GEAR (MOTOR)	E	
219	3F		D13-0810-04	GEAR (MD)	E	
220	3F		D13-0819-03	GEAR	E	
221	1F		D13-0814-04	GEAR (PULLEY)	E	
222	2F		D15-0297-04	PULLEY	E	
223	1F		D16-0284-03	BELT	E	
227	1F		E23-0343-04	TERMINAL (SHORT)	E	
228	2F		E31-7240-05	WIRING HARNESS	E	
229	2F		E31-7829-05	WIRING HARNESS	E	
230	2F		E31-7238-05	WIRING HARNESS (5P)	E	
231	3F		E31-7830-05	WIRING HARNESS (4P)	E	
232	3F	*	E35-0233-05	LEAD WIRE	E	
235	1F		F19-1015-24	BLIND PLATE	E	
238	2F		G01-2402-04	COMPRESSION SPRING	E	
239	2F		G01-3317-04	COMPRESSION SPRING	E	
240	1F		G02-0933-04	FLAT SPRING	E	
241	1F		G02-0934-04	FLAT SPRING	E	
242	2E		G16-0739-04	SHEET	E	
243	2E		G16-0744-04	SHEET	E	
245	1F		G02-0973-04	FLAT SPRING ASSY	E	
247	2F		J02-1033-05	INSULATOR	E	
248	2E		I11-0156-03	CLAMPER	E	
251	2E		J99-0068-01	TRAY	E	
-			N88-3008-45	FLAT HEAD TAPTITE SCREW	E	
A			N35-2605-46	BINDING HEAD MACHIN SCREW	E	
B			N09-1522-05	SET SCREW (3X8)	E	
C			N39-2025-46	PAN HEAD MACHIN SCREW	E	
D			N89-2008-46	BINDING HEAD TAPTITE SCREW	E	
E			N89-2610-46	BINDING HEAD TAPTITE SCREW	E	
F			N19-1179-05	FLAT WASHER	E	
G			N89-2608-46	BINDING HEAD TAPTITE SCREW	E	
H			N19-1217-04	FLAT WASHER	E	
J			N89-2006-46	BINDING HEAD TAPTITE SCREW	E	
K			N89-2606-46	BINDING HEAD TAPTITE SCREW	E	
255	3F		S33-1022-05	LEVER SWITCH	E	
256	2F		S33-2061-05	LEVER SWITCH	E	
263	2F		T50-1045-04	YOKET	E	
264	2F		T99-0233-05	MAGNET	E	
DM	3F		A11-0675-08	SUB CHASSIS ASSY (DISC MOTOR)	E	
FM	3F		T42-0552-05	FEED MOTOR	E	
LW	2F		T42-0550-05	LOADING MOTOR	E	
PU	3F		T25-0011-05	OPTICAL PICKUP HEAD (KSS-210A)	E	

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