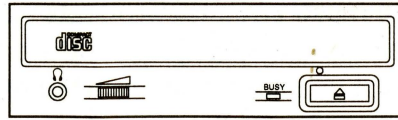


# Service Manual



ORDER NO.  
**RRV1431**

CD-ROM DRIVE UNIT

# DR-2111

# DR-UP124X-5

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	Remarks
	DR-2111	DR-UP124X-5		
ZUC/WL	○	○	DC power supplied from other system component	

## CONTENTS

1. SAFETY INFORMATION .....	2	6. ADJUSTMENTS .....	17
2. EXPLODED VIEWS, PACKING AND PARTS LIST .....	3	7. FUNCTION OF PERSONAL COMPUTER FOR SERVICING .....	22
3. SCHEMATIC AND PCB CONNECTION DIAGRAMS .....	7	8. IC INFORMATION .....	26
4. PCB PARTS LIST .....	15	9. BLOCK DIAGRAM .....	30
5. DISASSEMBLY .....	16	10. PANEL FACILITIES .....	31
		11. SPECIFICATIONS .....	31

## 1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

### WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

### (FOR EUROPEAN MODEL ONLY)

#### VARO!

AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.



LASER  
Kuva 1  
Lasersäteilyn varoitusmerkki

#### ADVERSEL:

USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.

#### VARNING!

OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

#### WARNING!

DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.



LASER  
Picture 1  
Warning sign for laser radiation

#### IMPORTANT

THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1. SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUMENTED PERSON.

#### LASER DIODE CHARACTERISTICS

MAXIMUM OUTPUT POWER: 5 mw  
WAVELENGTH: 780 - 785 nm

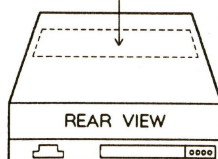
## LABEL CHECK



DRW1684



ZUC/WL model



### Additional Laser Caution

#### 1. Laser Interlock Mechanism

The position of the switch (S902) for detecting loading completion is detected by the system microprocessor, and the design prevents laser diode oscillation when the switch (S902) is not in CLMP terminal side (when the mechanism is not clamped and  $\overline{\text{CLMP}}$  signal is high level.) Thus, the interlock will no longer function if the switch (S902) is deliberately set to CLMP terminal side. (if  $\overline{\text{CLMP}}$  signal is low level).

In the test mode \* the interlock mechanism will not function.

Laser diode oscillation will continue, if pin 4 of TA2066F (IC204) on the MOTHER board assy connected to GND, or pin 19 is connected to high level (ON), or else the terminals of Q206 are shorted to each other (fault condition).

#### 2. When the cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

\* Refer to page 18.



## 2. EXPLODED VIEWS, PACKING AND PARTS LIST

**NOTES :**

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- Parts list without notice are common for DR-2111 and DR-UP124X-5.

### 2.1 PACKING

#### ■ CONTRAST OF DR-2111 AND DR-UP124X-5

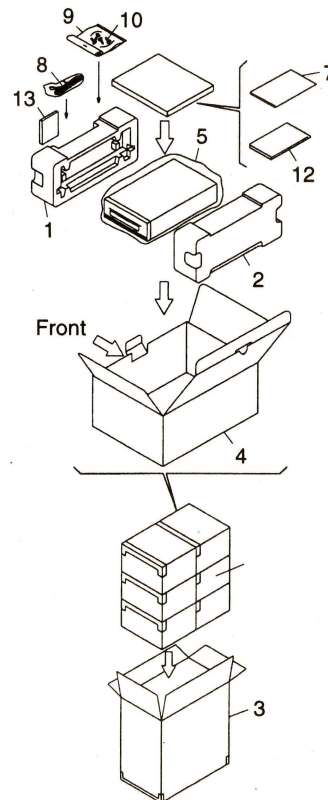
DR-2111 and DR-UP124X-5 have the same construction except for the following:

Mark	No.	Description	Part No.		Remarks
			DR-2111	DR-UP124X-5	
NSP	1	Pad L	Not used	DHA1339	
	1	Pad (BULK)	DHA1353	Not used	
	2	Pad R	Not used	DHA1342	
	3	Master carton	Not used	DHG1704	
	4	Packing case	Not used	DHG1705	
	4	Packing case	DHG1699	Not used	
	8	Audio cable	Not used	DKP3114	
	9	Polyethylene bag	Not used	DHL1089	
	10	Screw	Not used	PMA30P050FMC	
	11	Plate	DHC1045	Not used	
	12	Install manual	Not used	DRB1202	
	13	Programmed FD (ATAPI)	Not used	DWX1669	

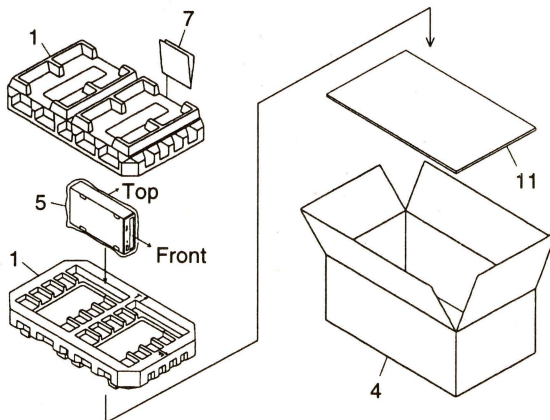
#### ■ PARTS LIST FOR DR-2111

Mark	No.	Description	Parts No.
NSP	1	Pad (BULK)	DHA1353
	2	.....	
	3	.....	
	4	Packing case	DHG1699
	5	Polyethylene bag	Z21-019
	6	.....	
	7	Operating instructions (English/French)	DRC1032
	8	.....	
	9	.....	
	10	.....	
	11	Plate	DHC1045

● Packing for DR-UP124X-5



● Packing for DR-2111

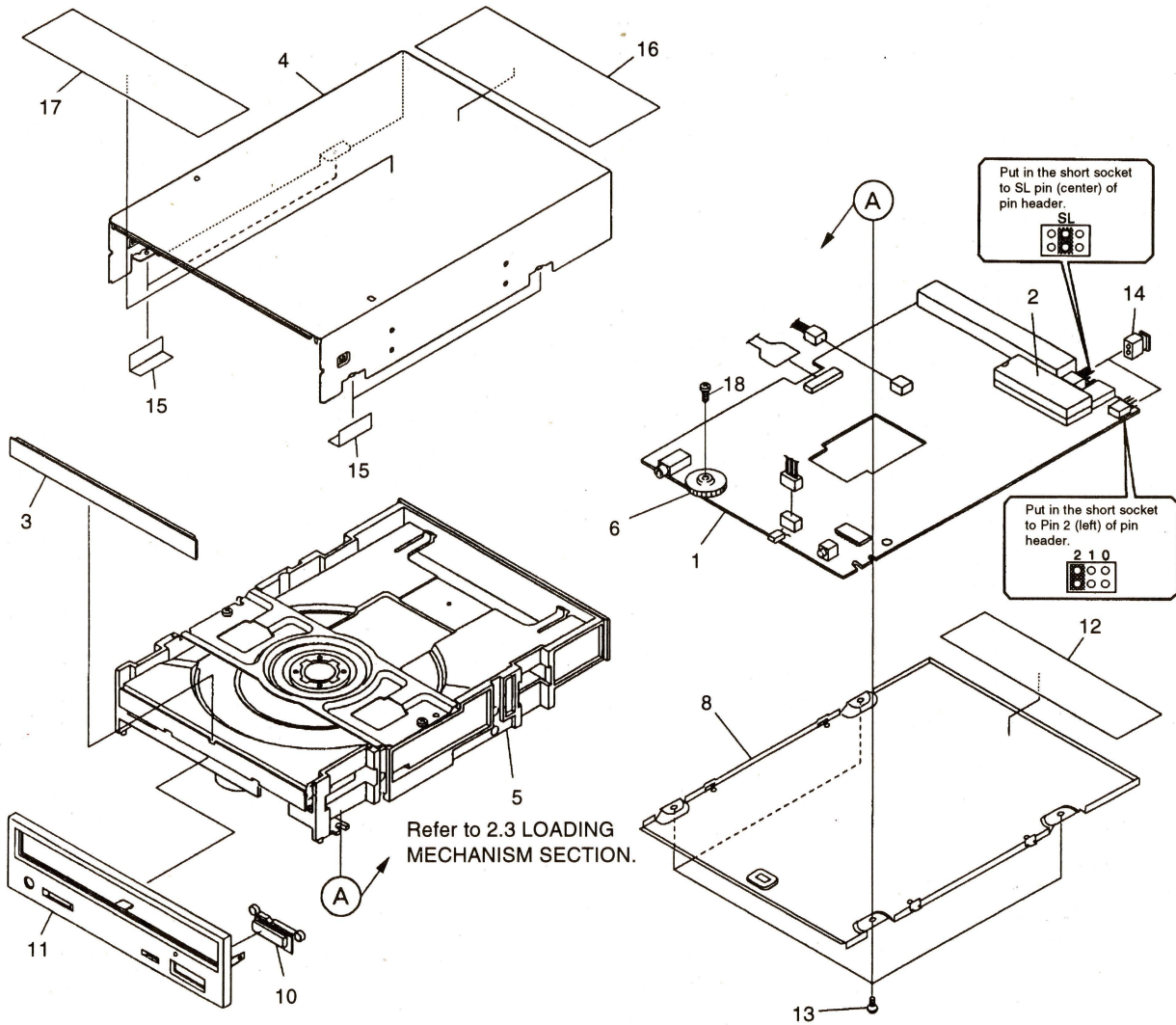


# DR-2111, DR-UP124X-5

## 2.2 EXTERIOR SECTION

### Parts List

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
NSP	1	MOTHER board assy	DWX1666	11	Front bezel (FOR DR-2111)	DAH1803	
	2	EP-ROM (ATAPI) (IC702)	DYW1506	11	Front bezel (FOR DR-UP124X-5)	DAH1802	
	3	Tray name plate A (ABS)	DAH1775	12	65 label	DRW1659	
NSP	4	Top case	DNC1417	13	Screw	BBZ26P080FMC	
NSP	5	Loading mechanism A assy	DXA1787	14	Short socket	DKX1039	
	6	Volume knob	DNK3222	15	Sheet	DEC1861	
	7	.....		16	Label (For DR-2111)	DRW1745	
NSP	8	Bottom case	DNC1395	16	Label (For DR-UP124X-5)	DRW1756	
	9	.....		17	Label	DRW1694	
	10	Eject knob	DAC1823	18	Screw	JGZ14P040FMC	

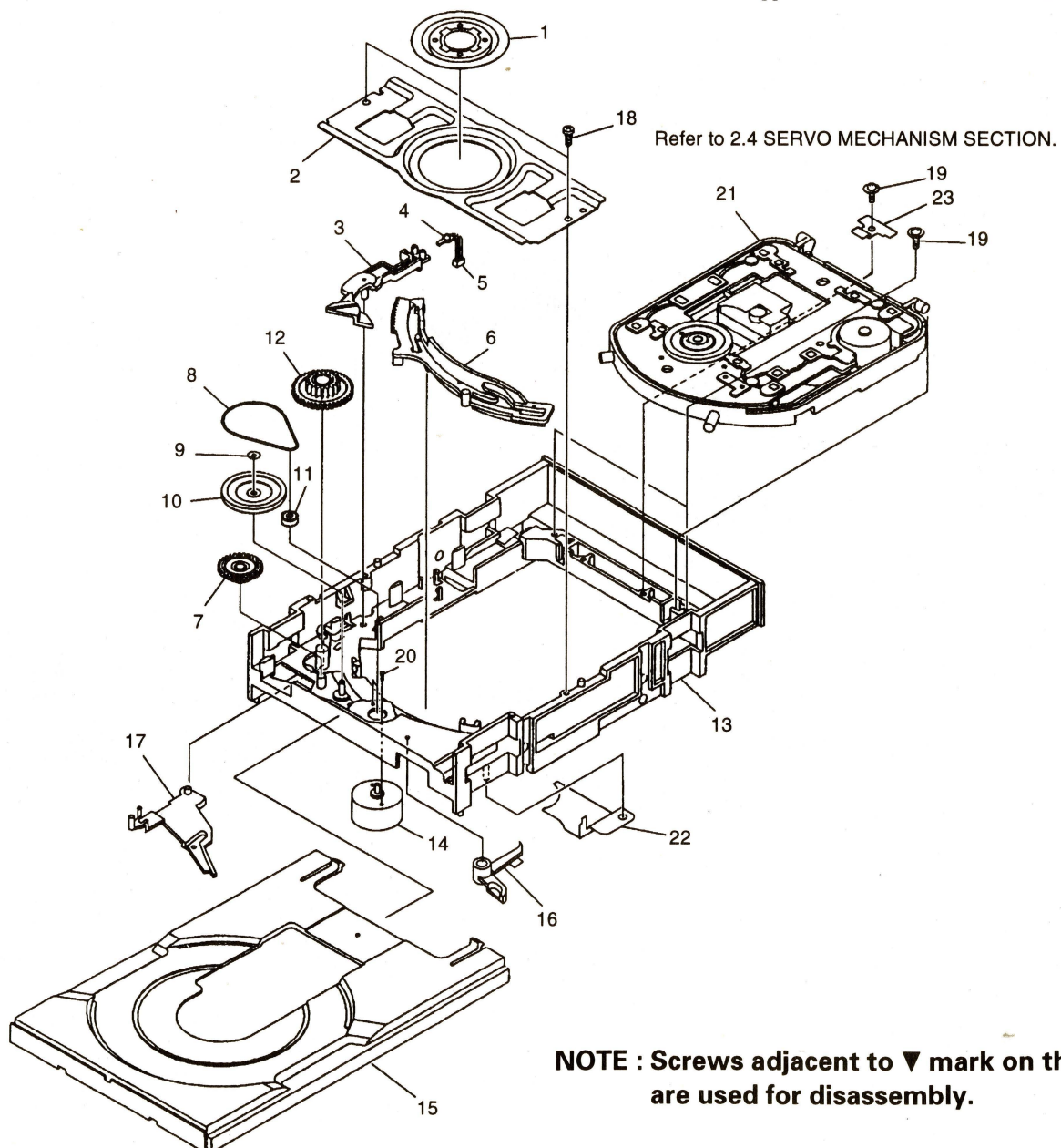




## 2.3 LOADING MECHANISM SECTION

### Parts List

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
1	Clamper assy	DXA1752	11	Motor pulley	PNW1634
2	Bridge	DNE1288	12	Drive gear	DNK3100
3	Switch lever	DNK3102	13	Load base	DNK3086
4	Lever Switch (LOADING)	DSK1001	14	Motor (LOADING)	DXM1077
5	Connector assy 3P	DKP3103	15	Tray	DNK3087
6	Drive cam	DNK3097	16	Eject lever	DNK3103
7	Loading gear	DNK3101	17	Drive lever	DNK3098
8	Belt	DEB1316	18	Screw	IBZ26P060FMC
9	Washer	WT21D050D050	19	TS screw	DBA1006
10	Gear pulley	DNK3099	20	Screw	JGZ17P030FMC
			21	Servo mechanism assy	DXB1580
			22	PVC sheet	DEC1875
			23	Stopper	DNH2076

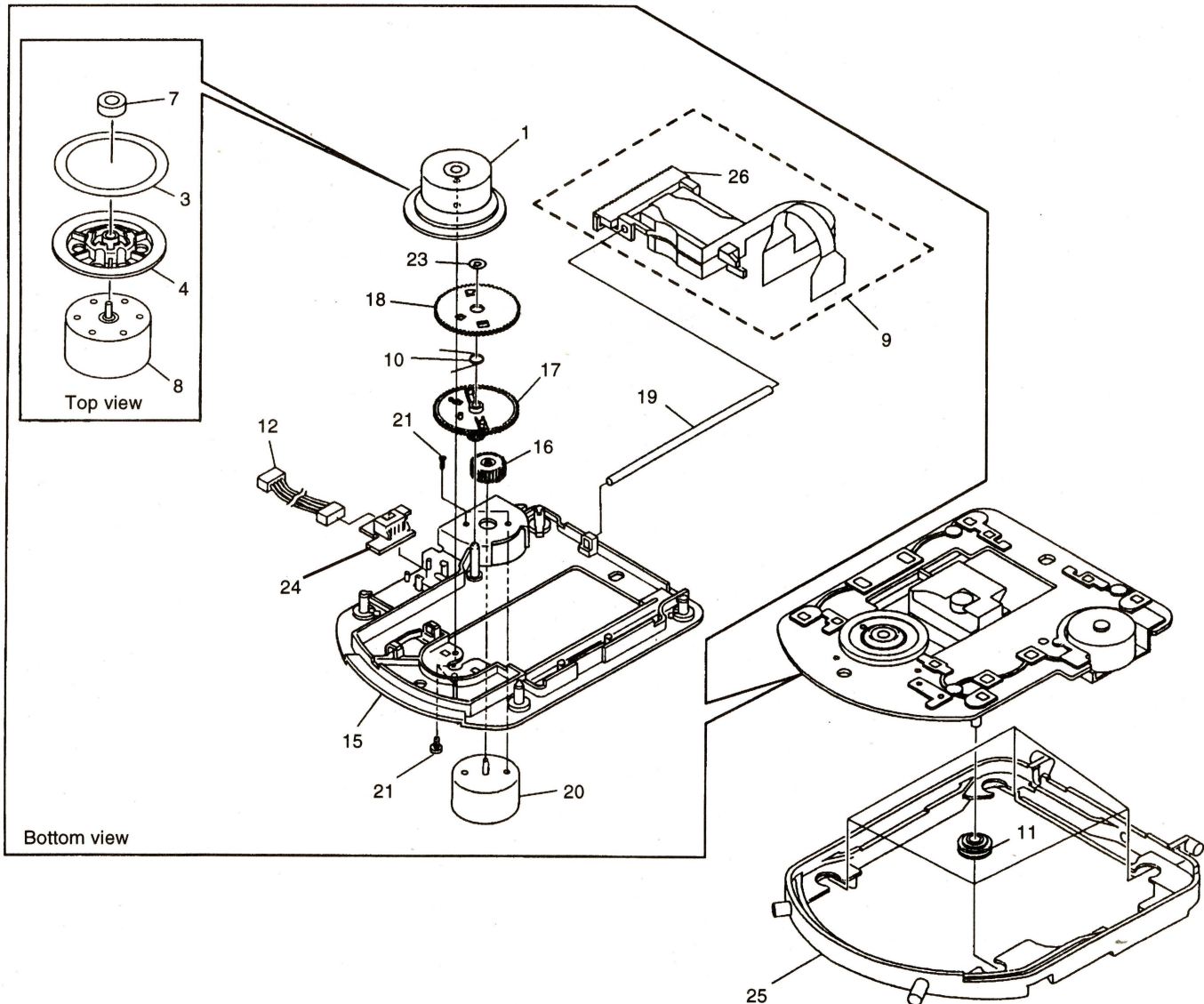


# DR-2111, DR-UP124X-5

## 2.4 SERVO MECHANISM SECTION

### Parts List

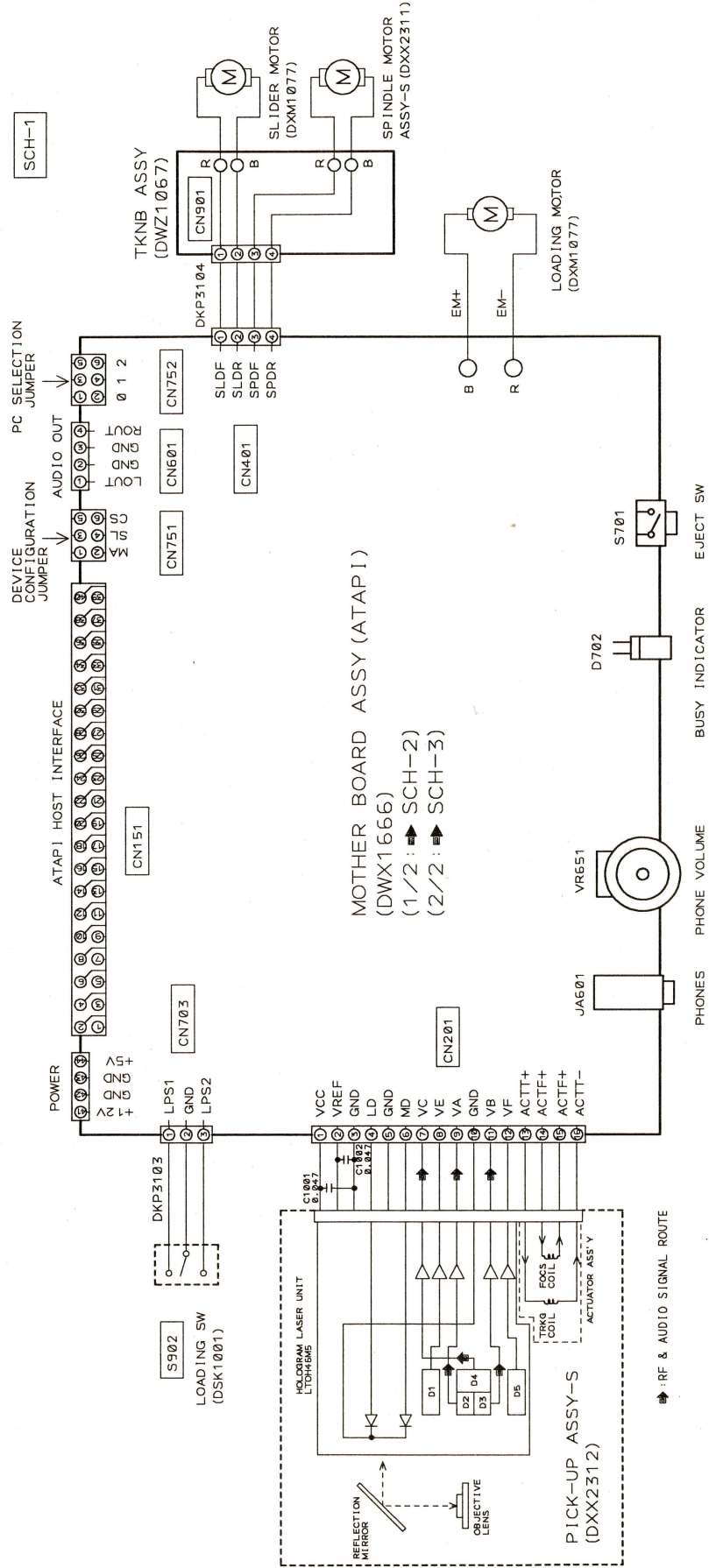
Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	Spindle motor assy-S	DXX2311	16	Motor pinion	DNK3090	
	2	.....		17	Gear A	DNK3092	
	3	Table sheet	DEC1871	18	Gear B	DNK3093	
NSP	4	Disc table Assy	DXA1797	19	Guide bar	PLA1094	
	5	.....		20	Motor (CARRIAGE)	DXM1077	
	6	.....		21	Screw	JGZ17P030FMC	
NSP	7	Magnet	DNS1186	22	.....		
NSP	8	Spindle motor	DXM1081	23	Washer	WT26D060D025	
	9	Pickup assy-S	DXX2312	NSP	24	TKNB UNIT	DWZ1067
	10	Gear spring	DBH1286	NSP	25	Disc man	DNK3089
	11	Float rubber	DEB1315	NSP	26	P.U. Assy (plastic)	DWY1057
	12	Connector assy 4P	DKP3239				
	13	.....					
	14	.....					
	15	Mechanism base (PPE)	DNK3212				





### 3. SCHEMATIC AND PCB CONNECTION DIAGRAMS

#### 3.1 OVERALL SCHEMATIC DIAGRAM



- NOTE FOR SCHEMATIC DIAGRAMS** (Type 4A)
- When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
  - Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
  - RESISTORS:**  
Unit: k: kΩ, M: MΩ, or Ω unless otherwise noted.  
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.  
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
  - CAPACITORS:**  
Unit: p: pF or μF unless otherwise noted.  
Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.  
Rated voltage: 50V except for electrolytic capacitors.
  - COILS:**  
Unit: m: mH or μH unless otherwise noted.
  - VOLTAGE AND CURRENT:**  
□ or + V : DC voltage (V) in PLAY mode unless otherwise noted.  
◇ mA or + mA : DC current in PLAY mode unless otherwise noted.  
Value in ( ) is DC current in STOP mode.
  - OTHERS:**
    - ⊙ or ⊗ : Adjusting point.
    - ⊕ : Measurement point.
    - The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
  - SCH-□ ON THE SCHEMATIC DIAGRAM:**
    - SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
  - SWITCHES** (Underline indicates switch position):  
S902 LOADING SW

MOTHER BOARD ASSY  
S701 EJECT SW

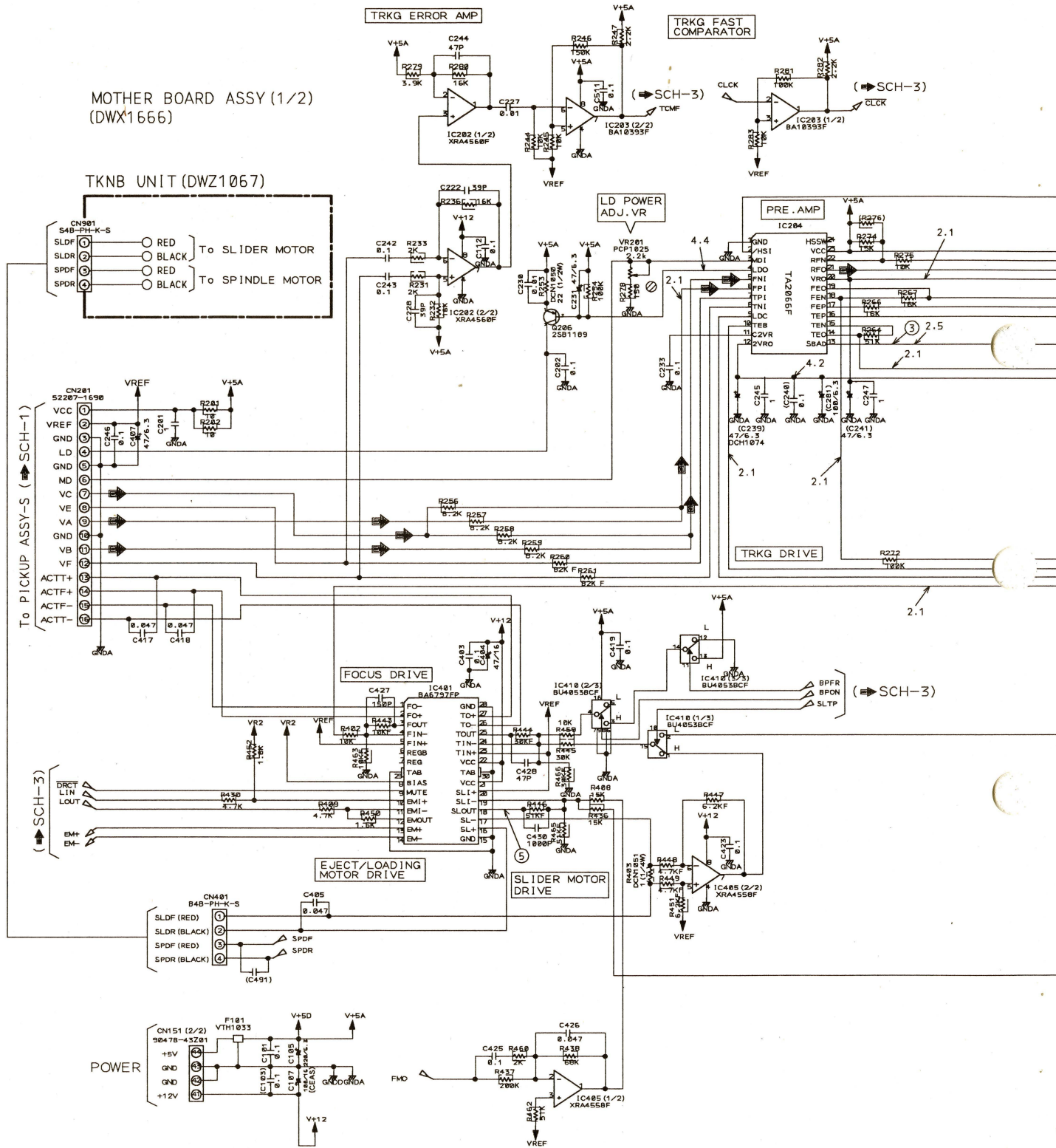
- NOTE FOR PCB DIAGRAMS:**
- Part numbers in PCB diagrams match those in the schematic diagrams.
  - A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

**SCH-1**

# DR-2111, DR-UP124X-5

## 3.2 MOTHER BOARD ASSY (1/2) AND TKNB UNIT

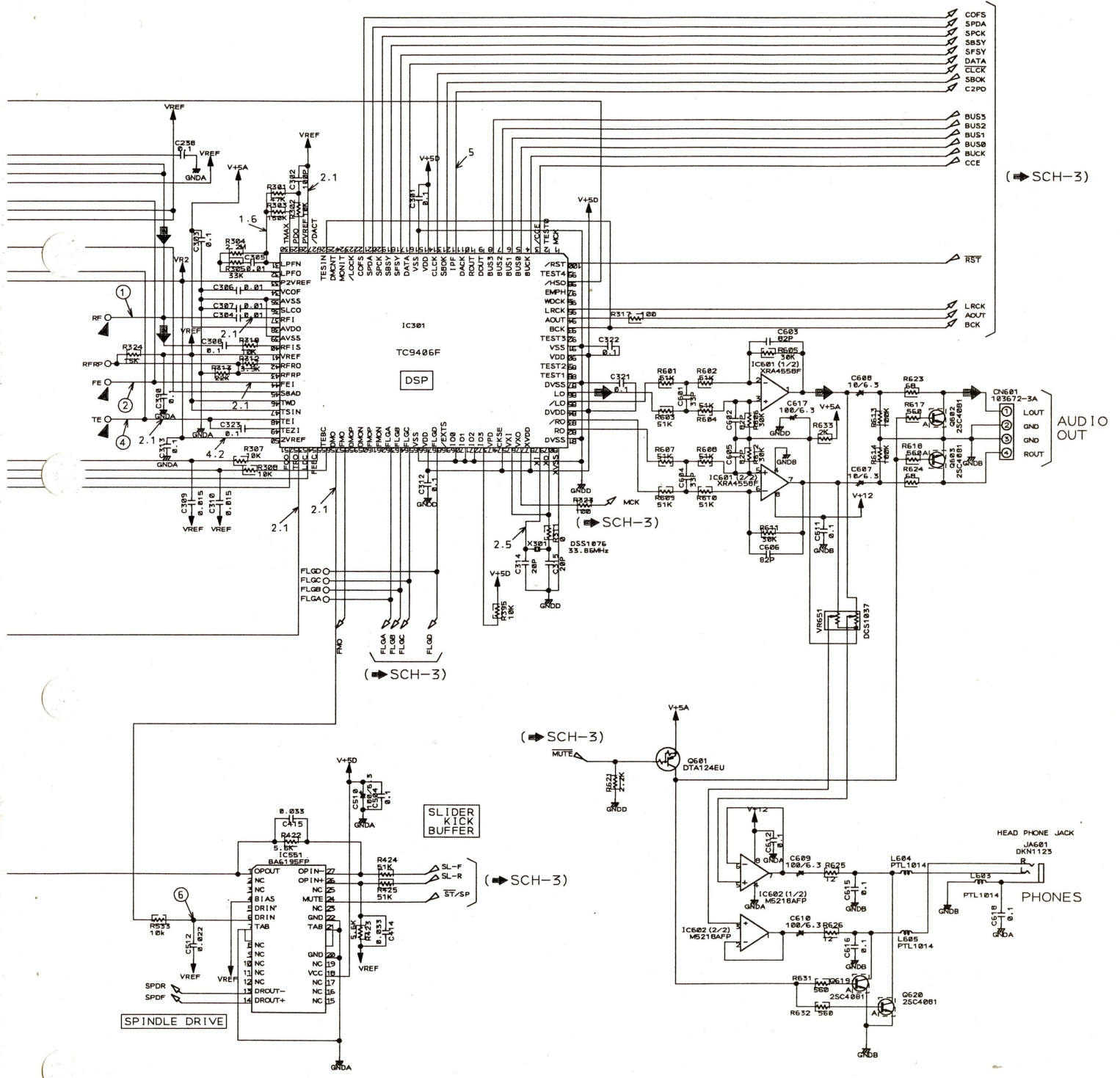


**SCH-2**



RF & AUDIO SIGNAL ROUTE

SCH-2



SCH-2







# DR-2111, DR-UP124X-5

PCB-1

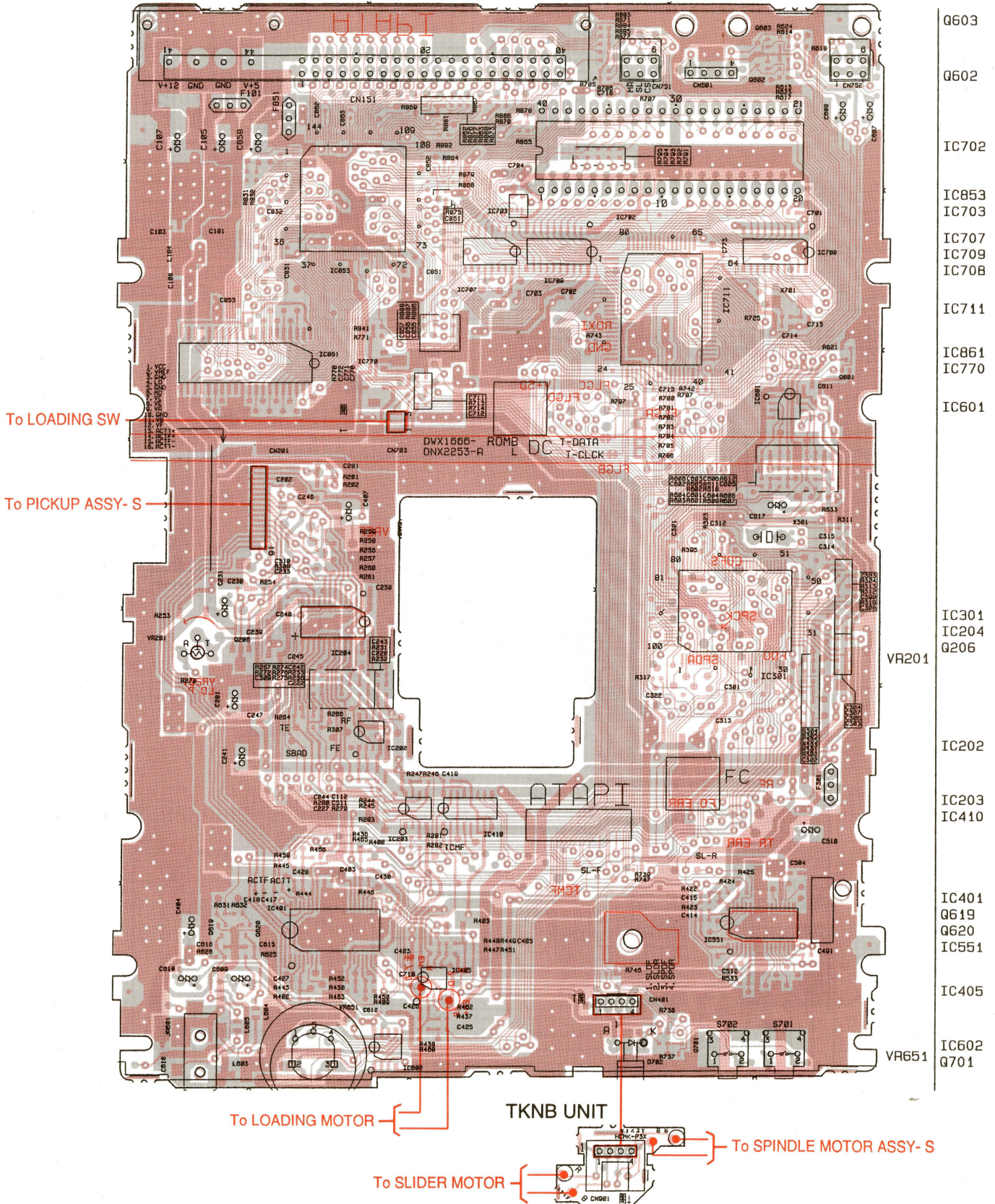
The parts mounted on this PCB include all necessary parts for several destinations.  
For further information for respective destinations, be sure to check with the schematic diagram.

このPCB図にマウントしている部品は複数の仕向地を含んでいます。  
各仕向地の情報は、回路図で確認するようにしてください。

- This diagram is viewed from the pink colored foil side.
- This is a multi-layer PCB.  
But information for both sides is shown.
- 薄紅色で表した銅箔面側から見た図です。
- この基板は多層基板です。表面の2層を掲示してあります。

## MOTHER BOARD ASSY

DNP1728-A



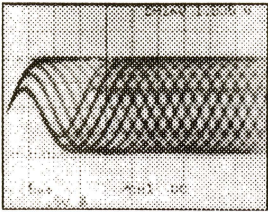
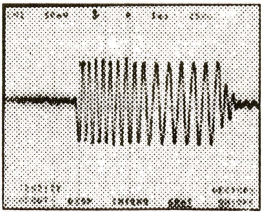
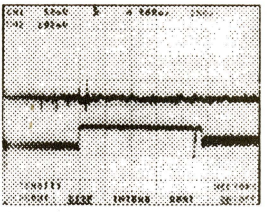
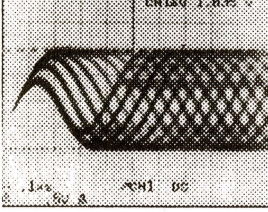
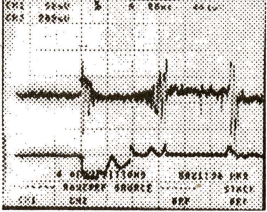
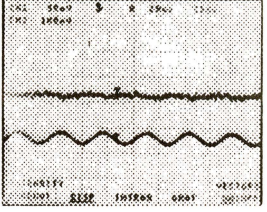
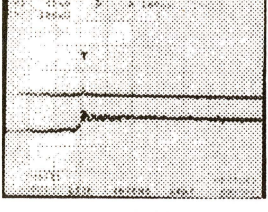
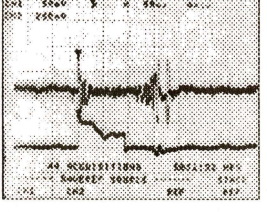
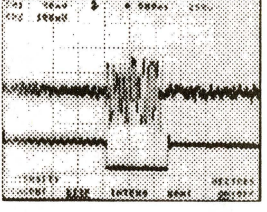
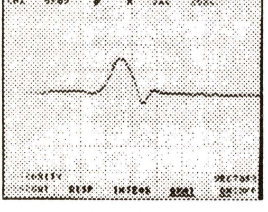
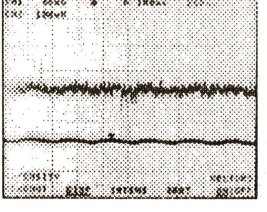
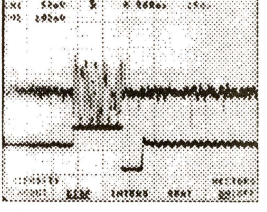
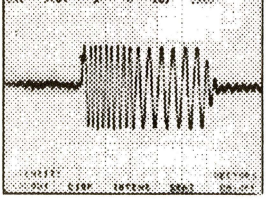
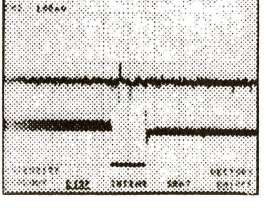
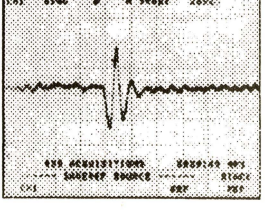






# DR-2111, DR-UP124X-5

## Waveforms of MOTHER BOARD Assy

 <p>① ←GND</p> <p>X1 RF 0.5v/div, 0.5µs/div</p>	 <p>④ ←GND</p> <p>X4 MULTI TRACK JUMP (REV) TE 0.5v/div, 1ms/div</p>	 <p>④ CH1 ⑥ CH2 ←GND</p> <p>X4 SEARCH (REV FULL STROKE) CH1 : TE 0.5v/div, 500ms/div CH2 : IC501-IN 1.0v/div, 500ms/div</p>
 <p>① ←GND</p> <p>X4 RF 0.5v/div, 0.1µF/div</p>	 <p>④ CH1 ⑤ CH2 CH1, 2 ←GND</p> <p>X4 SEARCH (FWD FULL STROKE) CH1 : TE 0.5v/div, 50ms/div CH2 : IC401-PIN18 (SLOUT) 2.0v/div, 50ms/div</p>	 <p>④ CH1 ⑥ CH2 ←GND</p> <p>X4 PLAY CH1 : TE 0.5v/div, 20ms/div CH2 : IC501-IN 1.0v/div, 20ms/div</p>
 <p>② CH1 ③ CH2 CH1, 2 ←GND</p> <p>FOCUS IN CH1 : FE 0.5v/div, 100ms/div CH2 : IC204-pin13 (SBAD) 1.0v/div, 100ms/div</p>	 <p>④ CH1 ⑤ CH2 CH1, 2 ←GND</p> <p>X4 SEARCH (REV FULL STROKE) CH1 : TE 0.5v/div, 50ms/div CH2 : IC401-PIN18 (SLOUT) 2.0v/div, 50ms/div</p>	 <p>④ CH1 ⑥ CH2 ←GND</p> <p>X1 SEARCH (FWD FULL STROKE) CH1 : TE 0.5v/div, 500ms/div CH2 : IC501-IN 1.0v/div, 500ms/div</p>
 <p>② ←GND</p> <p>FOCUS IN FE 0.5v/div, 2ms/div</p>	 <p>④ CH1 ⑥ CH2 CH1, 2 ←GND</p> <p>X1 PLAY CH1 : TE 0.5v/div, 100ms/div CH2 : IC501-IN 1.0v/div, 100ms/div</p>	 <p>④ CH1 ⑥ CH2 ←GND</p> <p>X1 SEARCH (REV FULL STROKE) CH1 : TE 0.5v/div, 500ms/div CH2 : IC501-IN 1.0v/div, 500ms/div</p>
 <p>④ ←GND</p> <p>X4 MULTI TRACK JUMP (FWD) TE 0.5v/div, 1ms/div</p>	 <p>④ CH1 ⑥ CH2 ←GND</p> <p>X4 SEARCH (FWD FULL STROKE) CH1 : TE 0.5v/div, 500ms CH2 : IC501-IN 1.0v/div, 500ms/div</p>	 <p>④ ←GND</p> <p>X4 STILL TE 0.5v/div, 500µs/div</p>



## 4. PCB PARTS LIST

**NOTES :**

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560  $\Omega$   $\rightarrow$   $56 \times 10^1 = 561$  ..... RD1/4PU  $\boxed{5} \boxed{6} \boxed{1} J$

47k  $\Omega$   $\rightarrow$   $47 \times 10^3 = 473$  ..... RD1/4PU  $\boxed{4} \boxed{7} \boxed{3} J$

0.5  $\Omega$   $\rightarrow$  0R5 ..... RN2H  $\boxed{0} \boxed{R} \boxed{5} K$

1  $\Omega$   $\rightarrow$  1R0 ..... RS1P  $\boxed{1} \boxed{R} \boxed{0} K$

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k  $\Omega$   $\rightarrow$   $562 \times 10^1 = 5621$  ..... RM1/4PC  $\boxed{5} \boxed{6} \boxed{2} \boxed{1} F$

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
------	-----	-------------	-----------	------	-----	-------------	-----------

**LIST OF PCB ASSEMBLIES**

		MAINB ASSY	DWM1538
NSP	└	MOTHER BOARD ASSY	DWX1666
NSP		TKNB UNIT	DWZ1067

**MOTHER BOARD ASSY**

**SEMICONDUCTORS**

IC203	BA10393F
IC551	BA6195FP
IC401	BA6797FP
IC410	BU4053BCF
IC861	LC321664AJ-80
IC853	LC895194-X07
IC602	M5218AFP
IC711	MB90T673
IC770	S-80742AN-D6
IC204	TA2066F
IC707	TC74HC138AF
IC708, IC709	TC74HC573AF
IC703	TC7S04F
IC301	TC9406F
IC405, IC601	XRA4558F-P
IC202	XRA4560F
Q206	2SB1189
Q602, Q603, Q619, Q620	2SC4081
Q601	DTA124EU
Q701	DTC124EU
D702	SLB-25MGTB7

**COILS AND FILTERS**

L603-L605	PTL1014
F101 (10000P)	VTH1033

**SWITCHES AND RELAYS**

S701	DSG1057
------	---------

**CAPACITORS**

C302	CCSRCH101J50
C427	CCSRCH151J50
C861	CCSRCH181J50
C314, C315	CCSRCH200J50
C601, C604	CCSRCH330J50

C222, C228, C428, C713, C714	CCSRCH390J50
C244, C855-C857	CCSRCH470J50
C602, C603, C605, C606	CCSRCH820J50
C607, C608	CEAL100M6R3
C510, C609, C610, C617	CEAL101M6R3

C404	CEAL470M16
C231, C407	CEAL470M6R3
C107	CEAS101M16
C858	CEAS101M6R3
C105	CEAS221M6R3

C201, C245, C247	CKSQYF105Z16
C430	CKSRYB102K50
C227, C230, C304-C307	CKSRYB103K50
C711, C712	CKSRYB103K50
C309, C310	CKSRYB153K50

C512	CKSRYB223K25
C414, C415	CKSRYB333K16
C101, C112, C202, C233, C238	CKSRYF104Z25
C242, C243, C246, C301, C303	CKSRYF104Z25
C308, C312, C313, C321-C323	CKSRYF104Z25

C390, C403, C419, C423, C425	CKSRYF104Z25
C504, C511, C611, C612	CKSRYF104Z25
C615, C616, C618, C701-C704	CKSRYF104Z25
C715, C718, C770-C773	CKSRYF104Z25
C831, C832, C851-C853	CKSRYF104Z25

C862, C863	CKSRYF104Z25
C405, C417, C418, C426, C710	CKSRYF473Z25

**RESISTORS**

VR651 (10 $\Omega$ )	DCS1037
VR201 (2.2k $\Omega$ )	PCP1025
R253 (22 $\Omega$ )	DCN1050
R403 (1.0 $\Omega$ )	DCN1051
Other Resistors	RS1/16S□□□J

**OTHERS**

CN601	CONNECTOR	103672-3A
CN201	FLEXIBLE CONNECTOR	52207-1690
CN751, CN752	PIN HEADER (6P)	9022B-06A
CN151	ATAPI/POWER SUPPLY CONNECTOR	9047B-43Z01
CN401	KR CONNECTOR	B4B-PH-K-S



# DR-2111, DR-UP124X-5

Mark No.	Description	Parts No.
X701	CERAMIC RESONATOR (4MHz)	CSAC4.00MGCM
X	IC SOCKET (40P)	DKH1016
JA601	MINI JACK	DKN1123
X301	(33.8688MHz)	DSS1076
CN703	CONNECTOR (3P)	S3B-ZR-SM3A

## TKNB UNIT

### OTHERS

CN901	KR CONNECTOR	S4B-PH-K-S
-------	--------------	------------

## 5. DISASSEMBLY

### ■ DISASSEMBLY THE FRONT BEZEL ASSY

#### ● Open the Tray

1. Make the key by using clip etc.  
(It may use to the metal sick which is extent of 1 mm in diameter and 50 mm long.)
2. Open the door by moving the eject lever which is inserted the key to the hole in vertically and pressing it as shown in Fig. 5-1.
3. Unhook the two hooks of the tray name plate.

#### ● Remove the Bottom Case

1. Remove the four screws ① to remove the bottom case.

#### ● Remove the Top Case

1. Be careful of the hooks (right and left) of the front bezel assy.

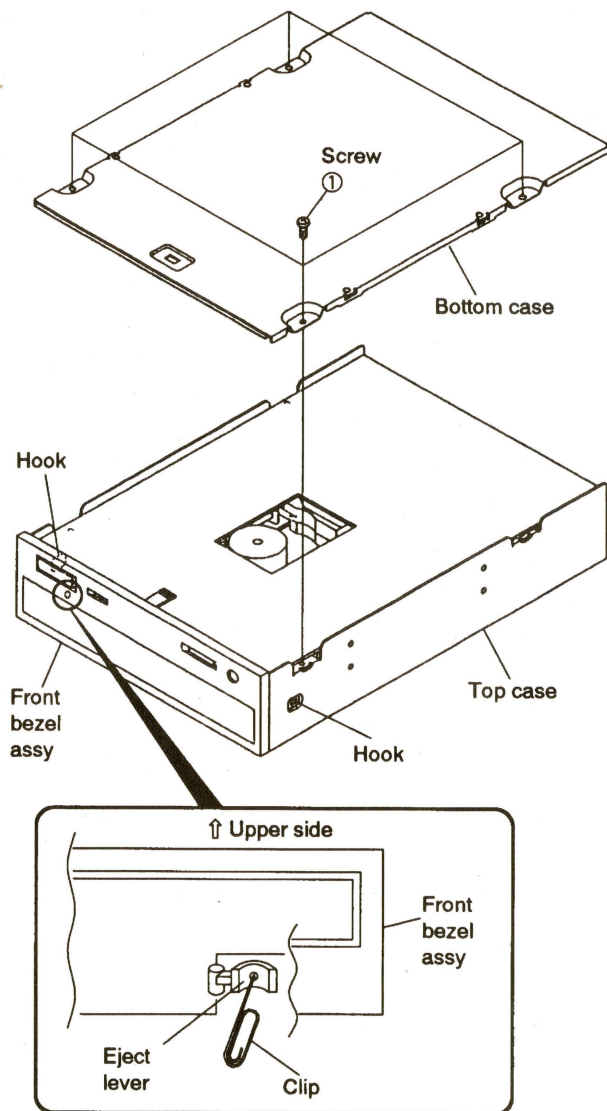


Fig.5-1 Disassembly (Bottom view)

## 6. ADJUSTMENTS

### 6.1 FUNCTION TABLE OF THE REMOTE CONTROLLER (RU-V101) FOR SERVICE

#### ● Test Mode

Shows the function table of the remote controller (RU-V101) for service as follows. When operating the CD-ROM directly, it is possible to operate as shown below by connecting the wired-remote control to the CD-ROM with the interface. When the test command is used, put in the short socket to MA, SL and GND pins of pin header (CN751) on the rear panel, and turn the power on. (Refer to Fig.2).

#### ● Schematic Diagram of the Conversion Jig for Remote Control Operation

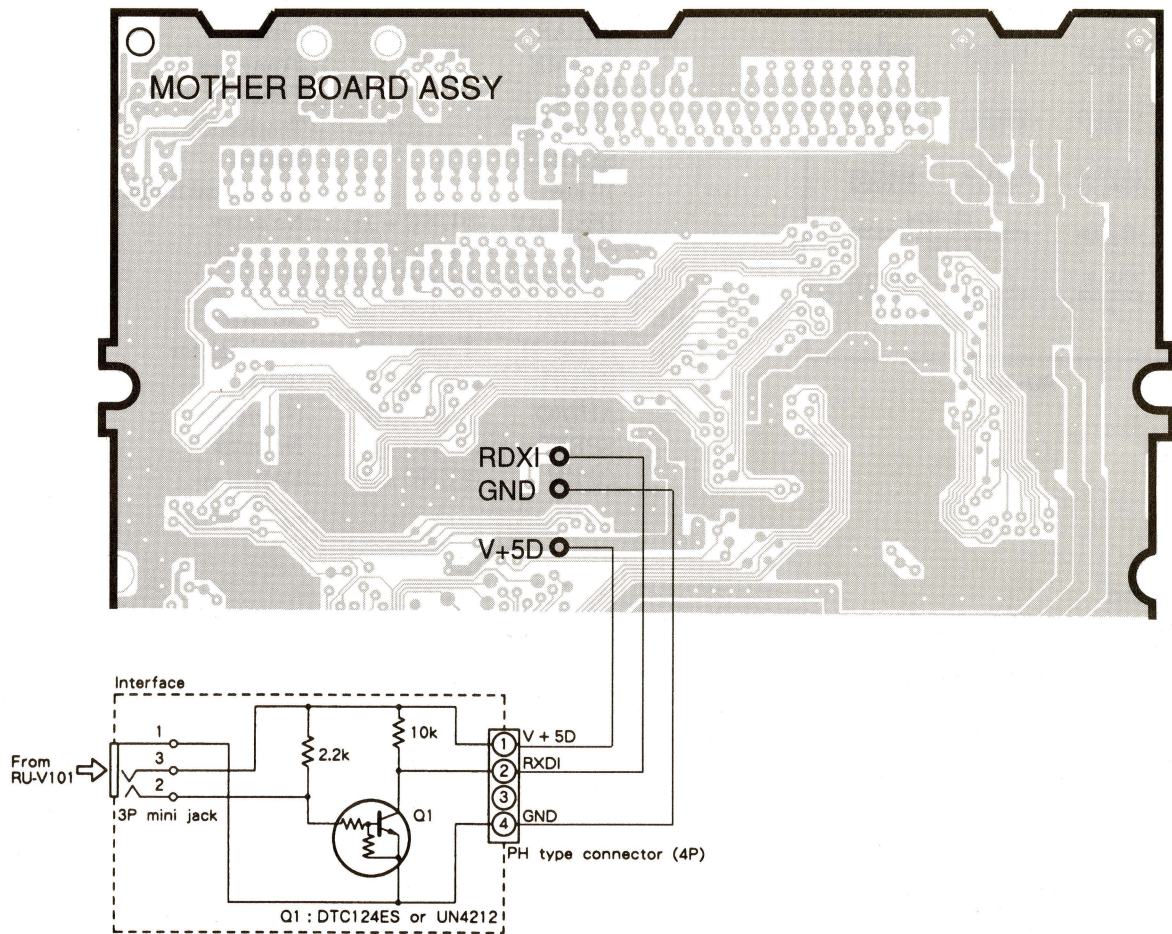


Fig.1

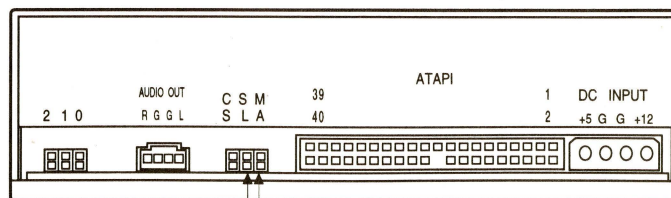
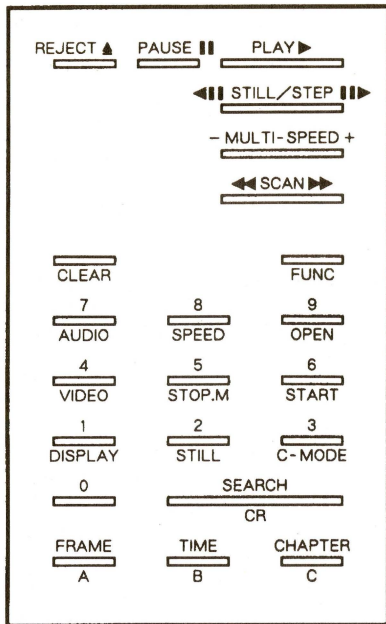


Fig.2





RU-V101

REJECT		: Spindle stop
PAUSE		: Pause
PLAY		: Play
STILL/STEP	►►	: Test command
STILL/STEP	◄◄	: Test command
MULTI-SPEED +		: Test command
MULTI-SPEED -		: Test command
SCAN	►►	: Scan FWD
SCAN	◄◄	: Scan REV
CLEAR		: Clear
FRAME		: Frame set
TIME		: Time set
CHAPTER		: Track set
SEARCH		: Search
10 key		: Numerical input
DISPLAY	(FUNC + 1)	: No entry
STILL	(FUNC + 2)	: No entry
C-MODE	(FUNC + 3)	: No entry
VIDEO	(FUNC + 4)	: No entry
STOP. M	(FUNC + 5)	: Stop marker
START	(FUNC + 6)	: Start
AUDIO	(FUNC + 7)	: No entry
SPEED	(FUNC + 8)	: No entry
OPEN	(FUNC + 9)	: Door open

● Test Command

Key Operation	Command	Description
[0] + [TIME]	{0TM}	All servo OFF
[1] + [TIME]	{1TM}	Laser-diode (LD) ON
[2] + [TIME]	{2TM}	Focus ON
[3] + [TIME]	{3TM}	Spindle ON
[4] + [TIME]	{4TM}	Spindle/Tracking ON/OFF
[5] + [TIME]	{5TM}	Slider circumferential feed
[8] + [TIME]	{8TM}	Spindle rotation frequency : Normal speed
[9] + [TIME]	{9TM}	Spindle rotation frequency : fourfold speed
[STILL/STEP >>]	{SF}	1 Track jump : FWD
[STILL/STEP <<]	{SR}	1 Track jump : REV
[*] + [*] + [*] + [MULTI-SPEED +]	{***MF}	*** Track jump : FWD
[*] + [*] + [*] + [MULTI-SPEED -]	{***MR}	*** Track jump : REV

## 6.2 ADJUSTMENT METHODS

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

### ● Adjustment Items/Verification Items and Order

If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in steps 1-3, the pickup block may be defective.

Step	Item	Test Point	Adjustment Location
1	Focus offset verification	FO, ERR (FE)	None
2	Tracking error balance verification	TR, ERR (TE)	None
3	RF level adjustment (RF level)	RF	VR201

*Note : The digital servo IC (TC9406F) being used in this set has the following functions and does not provide focus offset, focus servo loop gain and tracking servo loop gain adjustments.*

### ● Abbreviation Table

FO. ERR (FE)	: Focus Error
TR. ERR (TE)	: Tracking Error
FO GAN	: Focus Gain
TR GAN	: Tracking Gain

#### 1. Average Function

For accurate servo control, FO. ERR and RF average measurements are performed and the measured values are compensated through a compensation circuit.

Thus, volume control for Focus offset adjustment is not provided.

#### 2. Auto Gain Control Function

The gain inside the filter is automatically adjusted to obtain a proper gain in the servo loop. This function permits the optimum gain to be obtained on each disc.

Thus, volume controls for FO. GAIN and TR. GAIN adjustments are not provided.

The gain adjustment is done before TOC reading.

### ● Measuring Instruments and Tools

1. Dual trace oscilloscope (10 : 1 probe)
2. Test disc (YEDS-7)
3. Standard tools



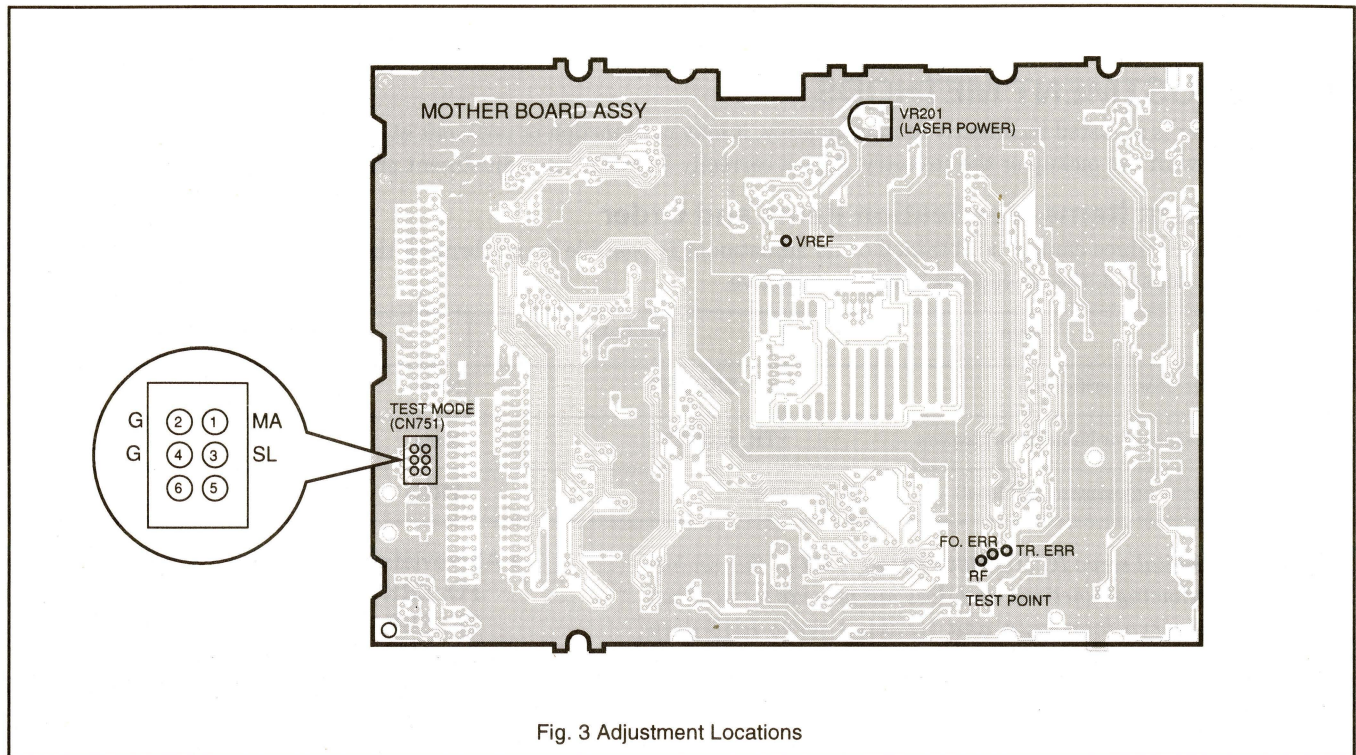


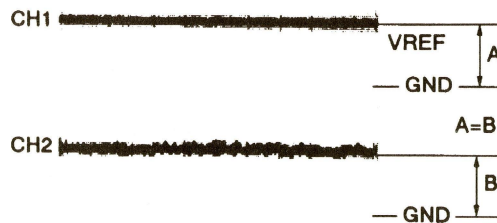
Fig. 3 Adjustment Locations

## 1. Focus Offset Verification

<ul style="list-style-type: none"> <li>● Objective</li> </ul>	Verify the DC offset for the focus error amp.		
<ul style="list-style-type: none"> <li>● Symptom when out of adjustment</li> </ul>	The model does not focus in and the RF signal is dirty.		
<ul style="list-style-type: none"> <li>● Measurement instrument connections</li> </ul>	Connect the oscilloscope to VREF (CH1), FO. ERR (CH2). Refer to Fig. 3.  [Settings] 1 V/division. 10ms/division. DC mode	<ul style="list-style-type: none"> <li>● Player state</li> <li>● Adjustment location</li> <li>● Disc</li> </ul>	Focus and spindle servos closed  None  YEDS-7

[Procedure]

1. Perform the automatic adjustment (offset, balance and gain) at the player is playbacked by pressing the PLAY key.
2. Close the focus servo.
3. Verify the focus error voltage at the closed is the same voltage (A=B) as the VREF voltage.



Note : If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in adjustment items 1-3, the pickup block may be defective.

### 2. Tracking Error Balance Verification

<ul style="list-style-type: none"> <li>● Objective</li> <li>● Symptom when out of adjustment</li> </ul>	To verify that there is no variation in the sensitivity of the tracking photo diode.  Play does not start or track search is impossible.		
<ul style="list-style-type: none"> <li>● Measurement instrument connections</li> </ul>	Connect the oscilloscope to TRK. ERR. (This connection may be via a low pass filter.)  [Settings] 50 mV/division. 5 mSec/division. DC mode	<ul style="list-style-type: none"> <li>● Player state</li> <li>● Adjustment location</li> <li>● Disc</li> </ul>	Test mode, focus and spindle servos closed and tracking servo open  None  YEDS-7
[Procedure] <ol style="list-style-type: none"> <li>1. Move the pickup to midway across the disc (R=35 mm) with the SCAN FWD &gt;&gt; or REV &lt;&lt; key.</li> <li>2. Press the [1] + [TIME] key, the [2] + [TIME] key, then the [3] + [TIME] key in that order to close the focus servo then the spindle servo.</li> <li>3. Line up the bright line (ground) at the very bottom grid line of the oscilloscope screen and put the oscilloscope into DC mode.</li> <li>4. Supposing that the positive amplitude of the tracking error signal at TR. ERR is (A) and the negative amplitude is (B), the following expression is satisfied.</li> </ol>			
When $A \geq B$ , $\frac{A-B}{C} \times \frac{1}{2} \leq 0.5$  When $A < B$ , $\frac{B-A}{C} \times \frac{1}{2} \leq 0.5$		<p>When there is a DC component</p> <p>When there is no DC component</p>	

### 3. RF Level Adjustment

<ul style="list-style-type: none"> <li>● Objective</li> <li>● Symptom when out of adjustment</li> </ul>	To optimize the playback RF signal amplitude.  No play or no search		
<ul style="list-style-type: none"> <li>● Measurement instrument connections</li> </ul>	Connect the oscilloscope to TRK. ERR. (This connection may be via a low pass filter.)  [Settings] 50 mV/division. 10mSec/division. DC mode	<ul style="list-style-type: none"> <li>● Player state</li> <li>● Adjustment location</li> <li>● Disc</li> </ul>	Test mode, play  VR201 (Laser power)  YEDS-7
[Procedure] <ol style="list-style-type: none"> <li>1. Move the pickup to midway across the disc (R=35 mm) with the SCAN FWD /or REV ! key, then press the [1] + [TIME] key, the [2] + [TIME] key, the [3] + [TIME] key, then the [4] + [TIME] key in that order to close the respective servos and put the player into play mode.</li> <li>2. Line up the bright line (GND) at the very bottom grid line of the oscilloscope screen and put the oscilloscope into DC mode.</li> <li>3. Adjust VR201 (Laser Power) so that the RF signal amplitude is 1.8 Vp±0.1 V. (Refer to the waveforms of MOTHER BOARD Assy)</li> </ol>			



## 7. FUNCTION OF PERSONAL COMPUTER FOR SERVICING

Use the floppy disc furnished with the product.

### 7.1 PROGRAM INSTALLATION AND REMOVAL

Multi-play control (MPC) has one program to make it resident in memory and another program that removes it from memory.

- (1) MPC.COM : Multi-play control program
- (2) MPCR.MV.COM : Removes MPC from memory

MPC is executed as follows :

MPC [Enter]

This entry places MPC in memory. Execution of the next program removes MPC from memory.

MPCR.MV [Enter]

### 7.2 CALLING THE MPC WINDOW

When MPC has been placed in memory and your PC is in the key input wait state.....

Press the GRPH key and the hyphen key at the same to make the MPC window pop up.

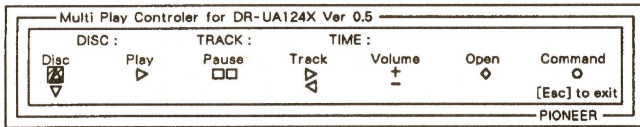


Fig. 1 MPC Window

ESC key : Closes MPC window

[→] [←] [↑] [↓] key : Select functions

Space key or enter key : Executes selected function

Direct Selection of Disc

When the cursor is at the [Disc] position.....

Directly input a number from 1 to 6 to select the disc.

### 7.3 CALLING A SUB-WINDOW

Execute a [Command] function to make a sub-window pop up, and then a mnemonic command can be executed. Use the ESC key to cancel a sub-window.

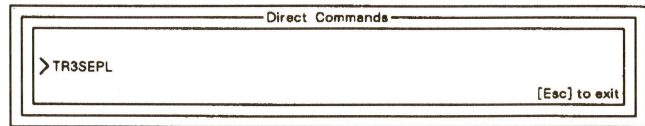


Fig. 2 Sub-Window

### 7.4 COMMAND LIST

Notes :

- The complete status "R" is returned when the execution of each command is completed.
- Park mode : A state in which the disc is cramped.
- Home mode : A state in which the disc is released.

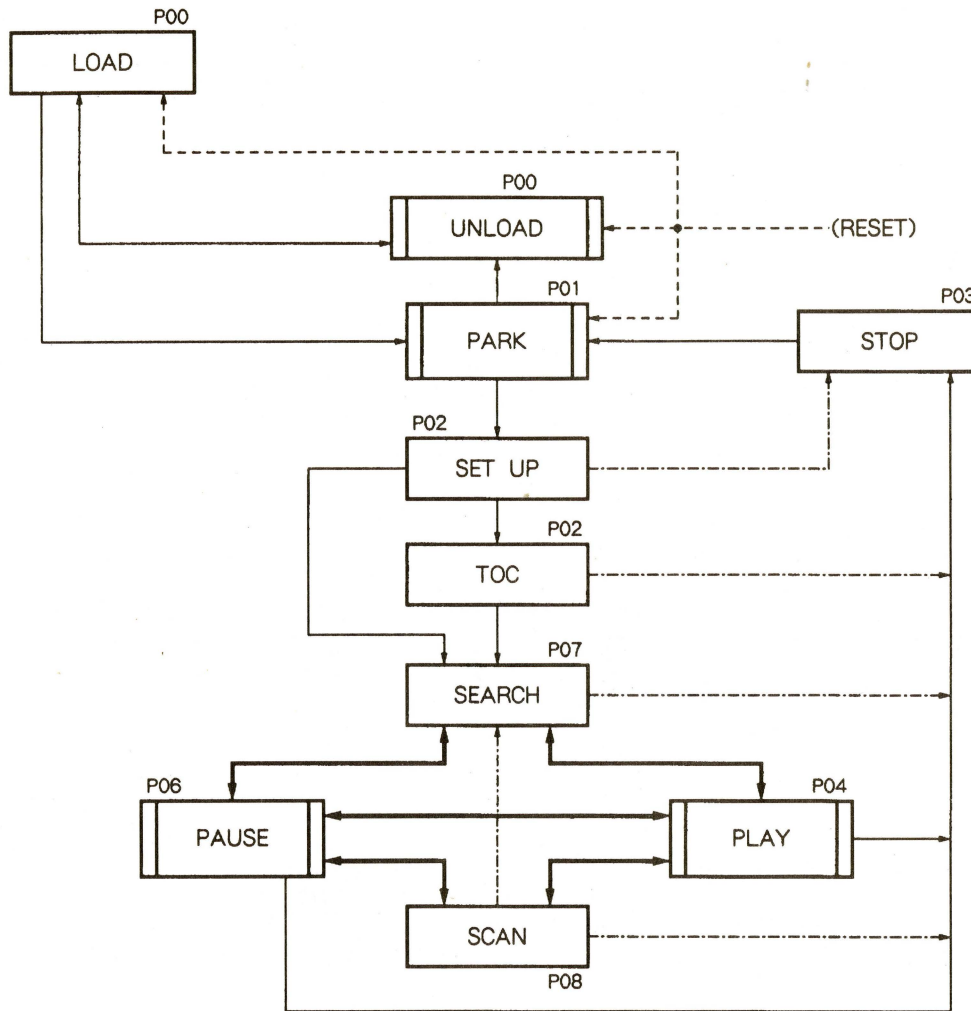
## ● Command List

Command Mnemonic	Command	Explanation
RJ	REJECT	Stops the disc rotation and enters park mode.
SA	START	Starts the disc rotation. When the first track is an audio track, the disc will pause at the beginning of the track while it will pause at 0 minutes 2 seconds 0 frames in a data track.
OP	DOOR OPEN	In the park mode, open the door and enter the door open mode. In the other mode, open the door after stop the disc rotation. Door open mode is in the tray opened state for exchanging the disc.
CO	DOOR CLOSE	In the door open mode, close the door and enter the park mode.
PL	PLAY	Enters play mode and plays the disc. Automatically stops if the specified command address overrun during playback. Example : TM2000PL (pause at 20 min. 00sec. frame.)
PA	PAUSE	Enters pause mode, stopping at the current point.
NF	SCAN FORWARD	Rapidly forwards for about 15 seconds. The audio level is attenuated by 12dB during the fast forward operation.
NR	SCAN REVERSE	Rapidly backs for about 15 seconds. The audio level is attenuated by 12dB during the fast back operation.
SE	SEARCH	Searches for the specified address and enters pause mode after the search operation. Example: BK4500SE (to specify a block), TR5SE, 6SE (to specify a track)
SM	STOP MARKER	Sets a stop marker at the specified address. Enters pause mode when passing over the stop marker during playback, clearing the marker. The stop marker is also cleared when the CLEAR or REJECT command is supplied before the stop marker is reached. Example : BK200000SMPL (To pause at 20 minutes 0 second 0 frame after playback)
BK	BLOCK	Uses the address flag to specify blocks. Subsequently, an address entered is regarded as a block number (BK+ a 6-digit number).
TM	TIME	Uses the address flag to specify a time. Subsequently, an address entered is regarded as a time code (TM+ a 4-digit number).
TR	TRACK	Uses the address flag to specify a track. Subsequently, an address entered is regarded as a time track number (TR+a 2-digit number).
IX	INDEX	Uses the address flag to specify an index. Subsequently, an address entered is regarded as an index number.
CL	CLEAR	Clears the digit buffer(numerical input)and cancels search mode, auto play mode or the stop marker. When the buffer is cleared during a search operation, the pickup stops moving for a pause. Resumes normal operation when the buffer is cleared during an auto play or stop marker operation.
LO	LEAD OUT SYMBOL	Sets a point in the lead-out area to an address. To be used when setting the stop marker on the last track of a disc having 99 tracks. Example : TR99SELOPL
VL	VOLUME	Adjusts the audio playback level. 0 : minimum, 255 : maximum
AD	AUDIO CONTROL	Select the audio outputs. 0 : OFF, 1 : L ch, 2 : R ch, 3 : STEREO, 4 : OFF, 5 : L ch, 6 : R ch, 7 : STEREO Example : 3AD
CM	COMMUNICATION	Sets the communication mode. With the DR-UP124X, DR-2111, only mode 3 can be set. Example : 3CM
KL	KEY LOCK	Activates or deactivate the keys on the front panel. 0 : Activate 1 : Deactivate Example : 1KL
?B	BLOCK NUMBER REQUEST	Returns the block number by a 6-digit number. The current address is returned during playback and the pause target address is returned during pause. "XXXXXX" is returned in park mode and "000000" is returned in the lead-in area.
?T	TIME CODE REQUEST	Returns the time code by a 4-digit number. The current address is returned during playback and the pause target address is returned during pause. "XXXX" is returned in park mode and "0000" is returned in the lead-in area.
?R	TRACK NUMBER REQUEST	Returns the track number by a 2-digit number. The current address is returned during playback and the pause target address is returned during pause. "XX" is returned in park mode, "00" is returned in the lead-in area and "AA" is returned in the lead-out area.
?I	INDEX NUMBER REQUEST	Simultaneously returns the track number and the index number by a 4-digit number. The current address is returned during playback and the pause target address is returned during pause. "XXXX" is returned in park mode, "0000" is returned in the lead-in area and "AA01" is returned in the lead-out area.





7.6 CD-ROM STATUS CHART



- Mode to return "R" when the command arrives
- Normal chart (normal transition)
- At reset
- Break by C/R, etc



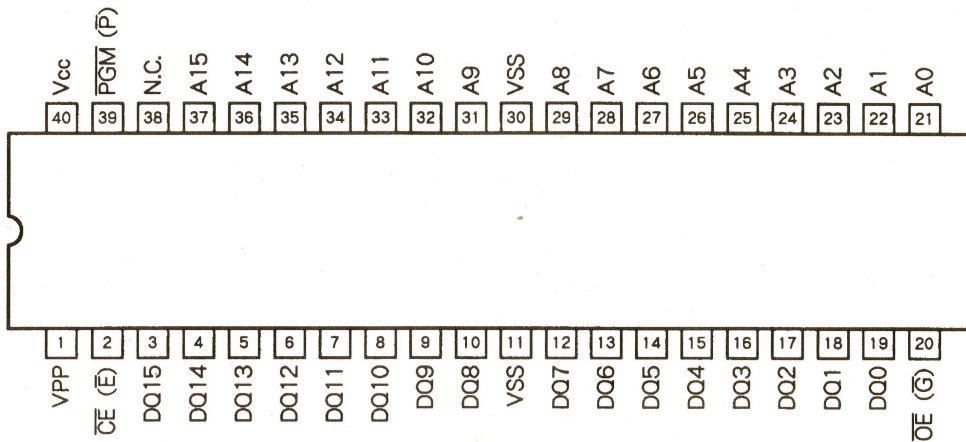
**8. IC INFORMATION**

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

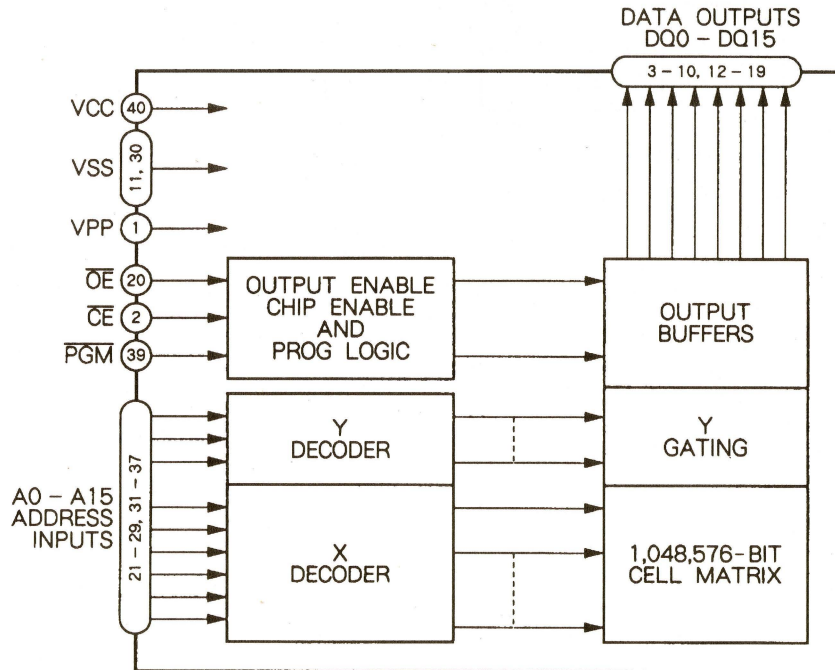
**■ DYW1506 (IC702 : MOTHER BOARD ASSY)**

• **1M bit (65,536 X 16-bit) CMOS EPROM**

• Pin Assignment (Top view)



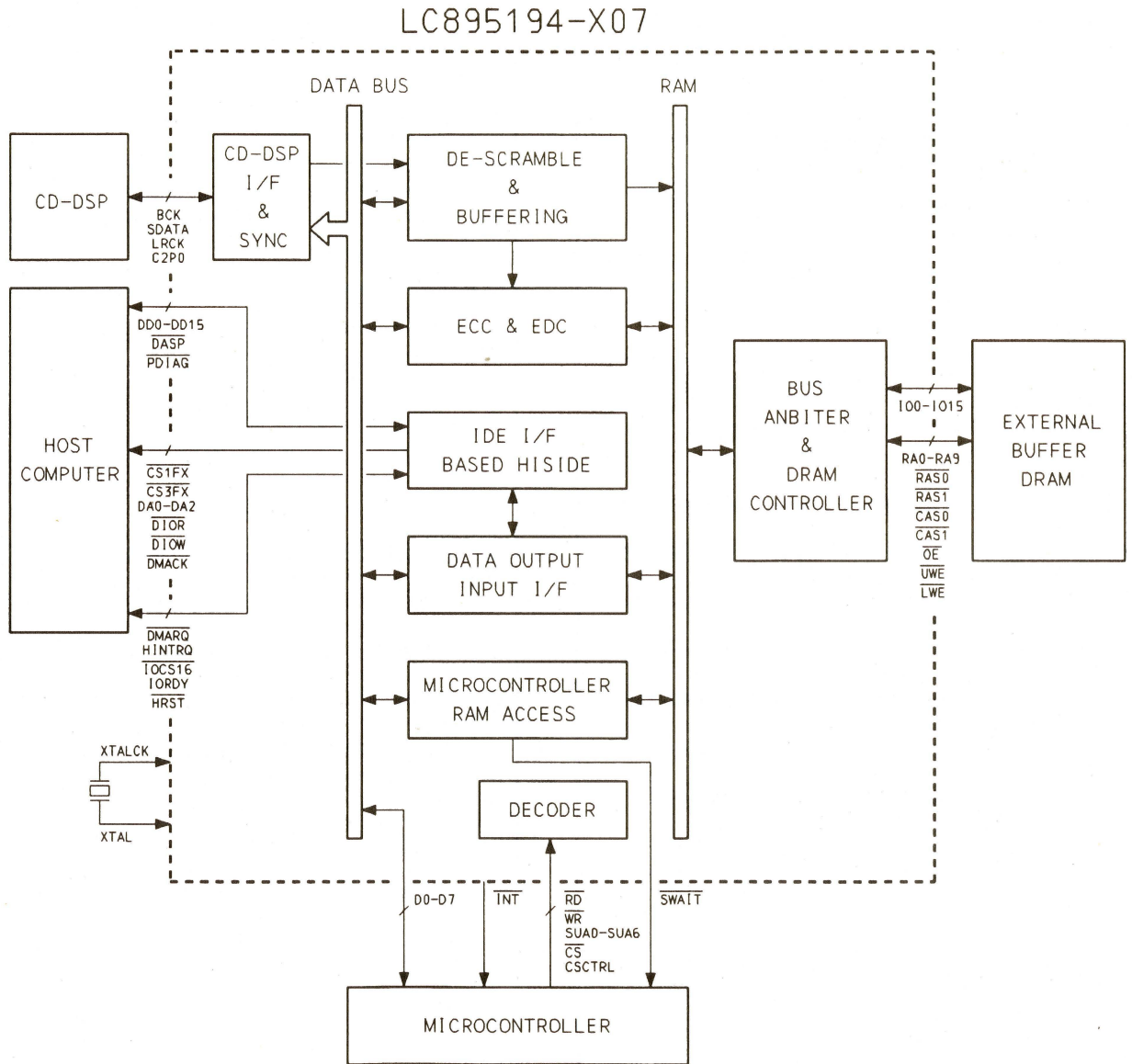
• Block diagram



■ LC895194-X07 [IC853: MOTHER BOARD ASSY (ATAPI)]

● ROM Decoder

● Block Diagram





# DR-2111, DR-UP124X-5

## ● Pin Function

No.	Pin Name	I/O	Description
1	Vss0	-	GND (for Logic)
2	$\overline{\text{RAS0}}$	O	RAS signal output terminal 0 to Buffer DRAM. (Normally 0)
3	$\overline{\text{RAS1}}$	O	RAS signal output terminal 1 to Buffer DRAM.
4	Vss0	-	GND (for Logic)
5	$\overline{\text{CAS0}}$	O	CAS signal output terminal 0 to Buffer DRAM. (Normally 0)
6	$\overline{\text{CAS1}}$	O	CAS signal output terminal 1 to Buffer DRAM.
7	Vss0	-	GND (for Logic)
8	$\overline{\text{OE}}$	-	Buffer RAM Output Enable
9	$\overline{\text{UWE}}$	-	Buffer RAM Upper Write Enable
10	$\overline{\text{LWE}}$	-	Buffer RAM Lower Write Enable
11   17	RA0   RA6	O	Data Buffer DRAM (address: RA0-RA9)
18	VDD	-	Power supply
19	Vss0	-	GND (for Logic)
20   22	RA7   RA9	O	Data Buffer DRAM (address: RA0-RA9)
23   29	RA10   RA16	O	SRAM, PSRAM (address: RA10-RA16)
30   35	IO0   IO5	I/O	Data Input/Output terminal to Data Buffer RAM. (built-in pull-up resistor)
36	Vss0	-	GND (for Logic)
37	VDD	-	Power supply
38   47	IO6   IO15	I/O	Data Input/Output terminal to Data Buffer RAM. (built-in pull-up resistor)
48   51	TEST0   TEST3	NC	Test terminal
52	Vss0	-	GND (for Logic)
53	Vss0	-	GND (for Logic)
54	TEST4	I	Test terminal (L: fixed)
55	Vss0	-	GND (for Logic)

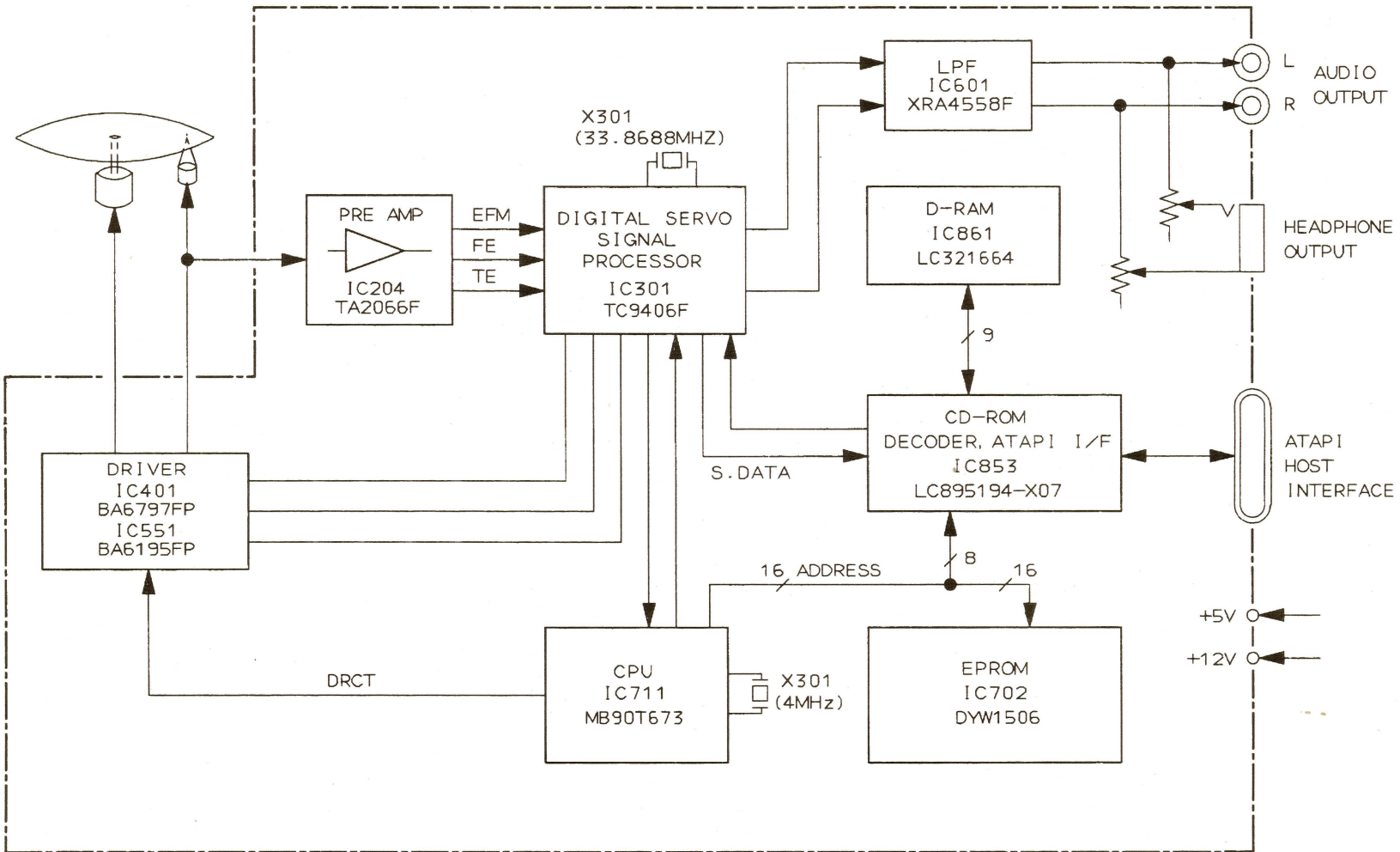
No.	Pin Name	I/O	Description
56	Vss0	-	GND (for Logic)
57	INT1	O	Interrupt request signal output terminal from IDE Block to MC (Microcontroller).
58   60	Vss0	-	GND (for Logic)
61	—	NC	Not connect (OPEN)
62	—	NC	
63	Vss0	-	GND (for Logic)
64	SDATA	I	CD-DSP I/F Terminal
65	BCK	I	
66	LRCK	I	
67	C2PO	I	
68	MCK2	O	1/1, 1/2, 1/512 Stop of XTALCK output
69	Vss0	-	GND (for Logic)
70	XTALCK	I	X'tal oscillation circuit input
71	XTAL	O	X'tal oscillation circuit output
72	Vss0	-	GND (for Logic)
73	VDD	-	Power supply
74	MCK	O	1/1, 1/2 Stop of XTALCK output
75	Vss0	-	GND (for Logic)
76	$\overline{\text{RSTIC}}$	O	Reset signal output to reset IC of drive
77	CSCTRL	I	Active (H or L) selection terminal of CS [MC (Microcontroller) side]
78	$\overline{\text{RESET}}$	I	LSI Reset terminal
79	$\overline{\text{RD}}$	I	MC (microcontroller) data read signal input
80	$\overline{\text{WR}}$	I	MC(microcontroller) data write signal input
81	$\overline{\text{CS}}$	I	Register chip selection input terminal from MC (microcontroller).
82	Vss0	-	GND (for Logic)
83   89	SUA0   SUA6	I	MC (microcontroller) register selection signal
90	VDD	-	Power supply
91	Vss0	-	GND (for Logic)

No.	Pin Name	I/O	Description
92   99	D0   D7	I/O	MC (Microcontroller) Data signal (built-in pull-up resistor)
100	$\overline{\text{INT}}$	O	Interrupt request signal output to MC (Microcontroller).
101	$\overline{\text{RSTCPU}}$	O	Reset signal output to CPU
102	$\overline{\text{SWAIT}}$	O	WAIT signal output to MC (Microcontroller).
103	$\overline{\text{HRST}}$	I	ATAPI Control signal
104	$\overline{\text{DASP}}$	I/O	
105	$\overline{\text{CS3FX}}$	I	
106	$\overline{\text{CS1FX}}$	I	
107	DA2	I	
108	Vss0	-	
109	VDD	-	Power supply
110	DA0	I	ATAPI Control signal
111	$\overline{\text{PDIAG}}$	I/O	
112	DA1	I	
113	$\overline{\text{OCS16}}$	O	
114	HINTRQ	O	
115	$\overline{\text{DMACK}}$	I	
116	Vss1	-	GND (for IDE I/F Driver)
117	IORDY	I	ATAPI Control signal
118	$\overline{\text{DIOR}}$	I	
119	$\overline{\text{DIOW}}$	I	
120	DMARQ	O	
121	DD15	I/O	ATAPI Data Bus
122	Vss1	-	GND (for IDE I/F Driver)
123	DD0	I/O	ATAPI Data Bus
124	DD14	I/O	
125	DD1	I/O	
126	DD13	I/O	
127	Vss1	-	GND (for IDE I/F Driver)

No.	Pin Name	I/O	Description
128	VDD	-	Power supply
129	DD2	I/O	ATAPI Data Bus
130	DD12	I/O	
131	DD3	I/O	
132	Vss1	-	GND (for IDE I/F Driver)
133	DD11	I/O	ATAPI Data Bus
134	DD4	I/O	
135	DD10	I/O	
136	Vss1	-	GND (for IDE I/F Driver)
137	VDD	-	Power supply
138	DD5	I/O	ATAPI Data Bus
139	DD9	I/O	
140	DD6	I/O	
141	Vss1	-	GND (for IDE I/F Driver)
142	DD8	I/O	ATAPI Data Bus
143	DD7	I/O	
144	VDD	-	Power supply



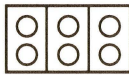
9. BLOCK DIAGRAM



## 10. PANEL FACILITIES

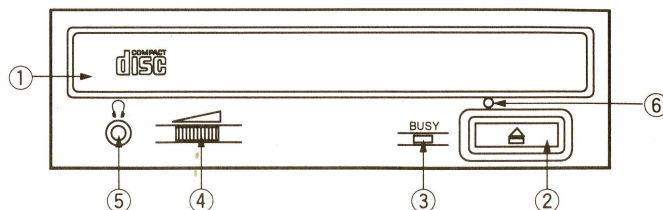
- ① **Disc tray**  
Auto loading by means of the Eject button.  
Place the CD-ROM with the label facing up onto the tray.
- ② **Eject button (0)**  
This button is used to open and close the tray.
- ③ **BUSY indicator**  
Flashes during data access.
- ④ **Volume control (headphone level)**  
This is used to adjust the volume for the headphone jack.
- ⑤ **Headphone jack**  
This is a stereo mini jack for connection of headphones.
- ⑥ **Forced ejection hole**  
When the Eject button is not functioning, the disc tray can be ejected by inserting a stiff rod into this hole and pushing. This should be done after the power supply has been switched off.
- ⑦ **DC Input**  
This is the power supply input for DC +5 V and +12 V.
- ⑧ **Host IDE Interface**  
This is a 40 pin I/O connector according to the ATA specifications.  
However, pin 20 is not being used.
- ⑨ **Audio Output (AUDIO OUT)**  
This is a connector for output of analog audio.  
As a Molex 70553 type connector is used, select a matching connection cable.
- ⑩ **Device Configuration Jumper**  
This is the jumper switch for selection of the drive use mode.  
The following modes can be selected with a short-circuit socket.  
MA : The drive is used in master mode.  
SL : The drive is used in slave mode.  
CS : Mode for drive setting by CSEL of the IDE interface.
- ⑪ **PC Selecting Jumper**  
Supporting PC is selected by setting the jumper switch.  
Short-circuit socket is attached for the setting  
attached : on                      not attached : off

	2	1	0	2 1 0
*1	IBM PC Compatible	off	off	
*2	NEC PC-98	off	off	on
	Reserved	othe setting		



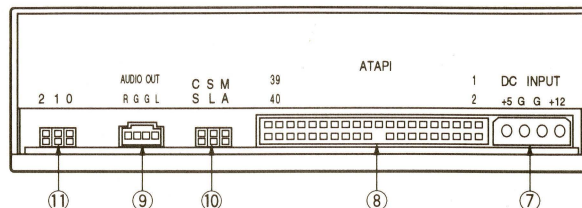
\*1 PCs compatible with Windows 95.  
\*2 PCs compatible with Windows 95 excepted.  
At the time of shipping from the factory, the short-circuit socket is inserted to the No. 2 terminal.  
In this condition, there is also compatibility with Windows 95.

### ● FRONT VIEW



### ● REAR VIEW

The display is on the top panel.



## 11. SPECIFICATIONS

### [General functions]

Disc diameter	12 cm, 8 cm
Transfer rate Sustained	614 kBytes/sec. (at quadruple speed) 153 kBytes/sec. (at single speed)
Burst	13 MBytes/sec.
Data capacity (per block)	2048 Bytes (Mode 1) 2336 Bytes (Mode 2)
User data/block	
Access time	
Random (average)	150 ms (at quadruple speed)
Data buffer capacity	128 kBytes

### [Audio output part]

Line	0.7 Vrms ± 0.2 Vrms (at 10 kW load)
------	--

### [Others]

Power supply	DC +12 V, 0.7 A (peak), 0.2 A (normal) DC +5 V, 0.8 A (peak), 0.5 A (normal)
External dimensions (except front panel)	146 (W) x 41.3 (H) x 203 (D) mm 5-3/4 (W) x 1-5/8 (H) x 8 (D) in
Weight	1.0 kg (2 lb 3 oz)
Operation temperature	+5°C to +45°C (41°F to 113°F)
Operation humidity	5% to 85% (no condensation)
Storage temperature	-40°C to +60°C (-40°F to 140°F)
Storage humidity	5% to 90% (no condensation)

### NOTE:

Specifications and design subject to possible modifications without notice, due to improvements.



MODEL No	* SER. No	S/M No	PG	MODEL No	* SER. No	S/M No	PG
DR-U124X-1/ZUC/WL	A PI -	RRV1274		DR-UA124X-2/ZUC/WL8	A PI -		
DR-UA124X-2/ZUC/WL	A PI -	RRV1273	7	DR-UA124X-3/ZUC/WL8	A PI -		
DR-UA124X-3/ZUC/WL	A PI -	RRV1273	7	DR-U124X-4/ZUC/WL8	A PI -		
DR-U124X-4/ZUC/WL	A PI -	RRV1274		DR-UA124X-5/ZUC/WL8	A PI -		
DR-UA124X-5/ZUC/WL	A PI -	RRV1273	7	DR-U124X-7/ZUC/WL8	A PI -		
DR-U124X-7/ZUC/WL	A PI -	RRV1355		DR-US124X-6/ZUC/WL8	A PI -		
DR-US124X-6/ZUC/WL	A PI -	RRV1355					
DR-U124X-PA/Z	A PI -	RRV1274					
DR-U124XWS/Z	A PI -	RRV1361					
DR-U124X-1/ZUC/WL8	A PI -						

**DETAIL**

**SYMPTOM** Strange noise comes out during rotation and can not play.  
Disc get scratches.  
No play.

**CAUSE** Magnet out of position.  
There was a problem for quantity and how to use at applying of glue.

**SERVICE REMEDY** # 1 Reinforcement by means of glue or exchange a spindle motor.

**FACTORY COUNTER -MEASURE** # 1 Reinforcement by means of glue.

**PI and after lots have no problem.**

**See to following page**

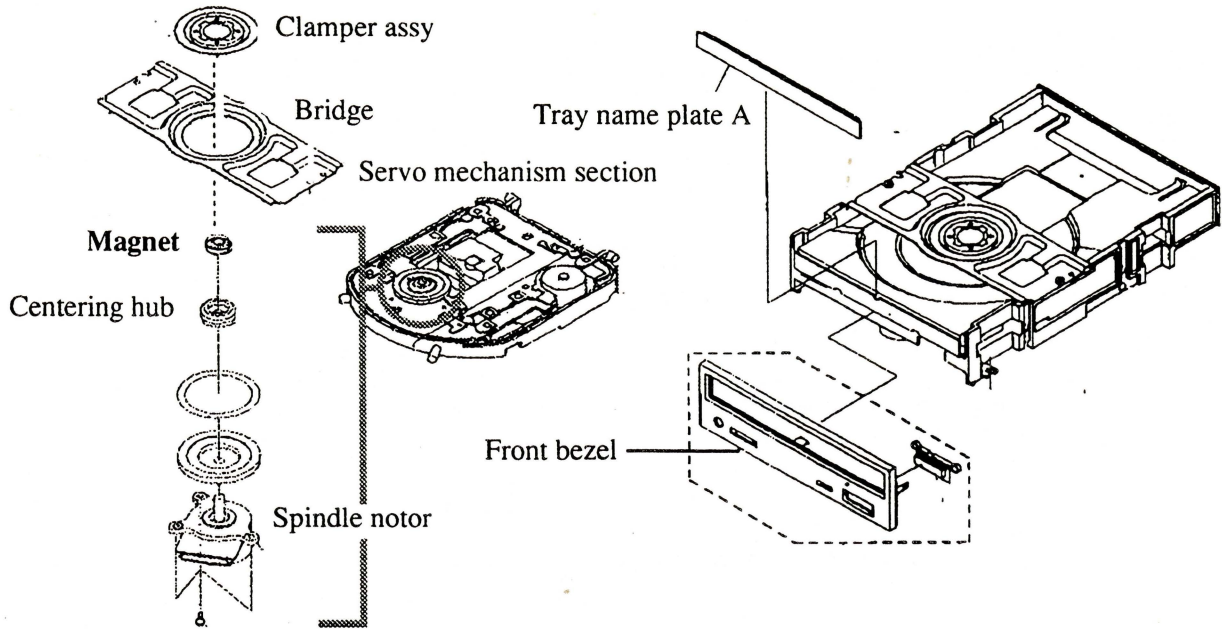
Ref.	CURRENT PARTS	CO	NEW PARTS
* #	SYMBOL/DESCRIPTION	PART NUMBER DE	PART NUMBER SYMBOL/DESCRIPTION
A 1		DEC1861	Dustproof sheet
A 1		DXX2266	Spindle motor

PIONEER ELECTRONIC CORPORATION

*Y. Imamizu*  
Y. IMAMIZU, MANAGER  
Industrial Engineering Section  
Service Division

**NOTE: PARTS CODE**  
1: Changeable from old to new.  
2: Not interchangeable at all.  
3: Interchangeable in both ways.  
5: Do not use old parts.

.....TOM50.030... ( AI-105 )  
Classify

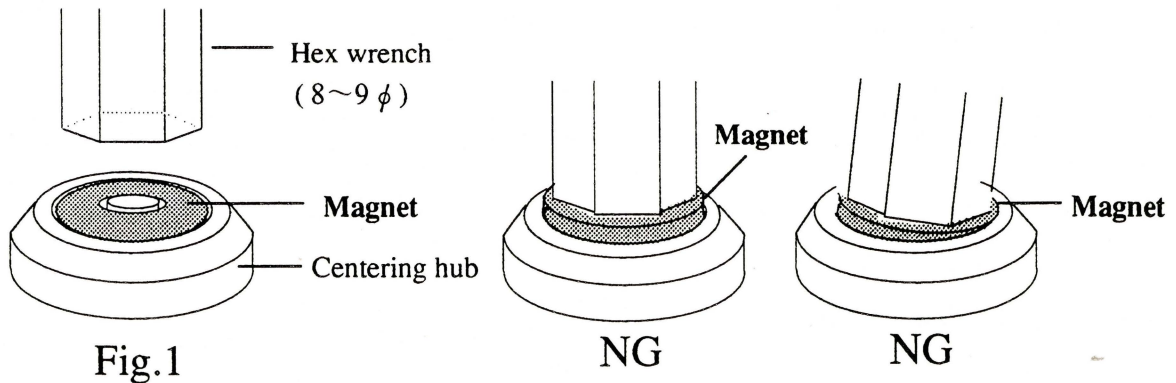


### Related SI

SI-V50025(Dustproof sheet) / SI-V50036(Front bezel)

### Inspection procedure

1. Remove four sheets from bottom case.
2. Turn on the power and open tray.
3. Remove tray name plate A.
4. Close tray.
5. Turn off the power.
6. Remove five screws from bottom case.
7. remove bottom case.
8. Remove front bezel ass'y by pressing both sides hook.
9. Turn over the unit and remove top case.
10. Remove clamper ass'y by using flat blade screw driver.
11. Close hex wrench (8-9 mm) and make sure that magnet does not move (fig.1).





### Modification procedure (if magnet was loose)

Step 1 to 10 as same as inspection procedure.

12. Add LOCKTITE 648 between magnet and centering hub ( three places ). (fig.2)

If glue ( LOCKTITE648 ) is not available replace a spindle motor ass'y ( DXX2266 ).

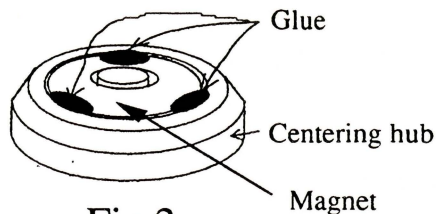


Fig.2

13. Leave the unit more than 5 minutes and remove excessive LOCKTITE 648 by using cloth with absolute alcohol.

Note: Make sure that alcohol should not touch table sheet on the turn table.

Do not put LOCKTITE 648 on the centering hub.

14. Attache clamper ass'y.

Note: Make sure that clamper ass'y could turn by hand.

15. Attache top case.

Note: Make sure that fixing boss (two) are fit to hole on the top case.

16. Attache front bezel ass'y.

Note: Make sure LED lines up to hole on the front bezel ass'y.

17. Attache bottom case and fix five screws in order as fig.3.

18. Turn on the power and open tray.

19. Attache tray name plate A.

20. Place audio CD on the tray.

21. Close tray and turn off the power.

22. Make short of short terminal pins on the rear panel.(refer to "set up for an audio check")

23. Turn on the power.

24. Make sure sound comes out.(You can check by using headphones)

25. Open tray and remove audio CD.

26. Turn off the power.

27. Remove short on terminal. (refer to "set up for an audio check")

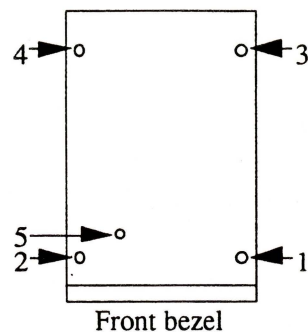
In case of ATAPI model remove alligator clip.

In case of SCSI model place back short pin.

28. Attache sheet on bottom case.

Make sure that front side two sheets should cover hooks of front bezel ass'y. (fig.4)

29. Put marking on the serial label by using black maker.



Front bezel

Fig.3

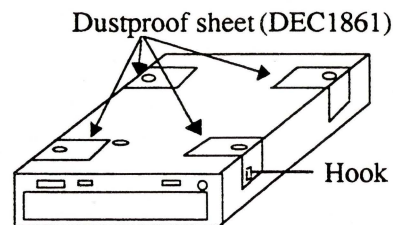


Fig.4

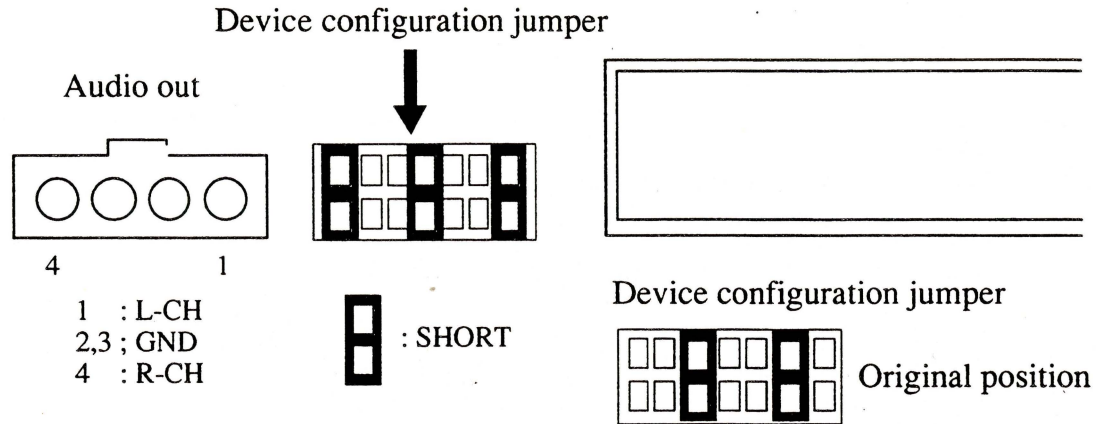
# SET UP FOR AN AUDIO CHECK

**You can check by using headphones.**

You should check audio output only after modification.

*Attention : After check audio output , please set original position for Device configuration jumper.*

## SCSI MODEL REAR VIEW



## ATAPI MODEL REAR VIEW

