RICOH

CD Recordable / ReWritable unit

CD-R/RW

E-IDE/ATAPI internal

User's Manual
Gebrauchsanleitung
Manuel de l'utilisateur
Manual del usuario
Liretto d'struzioni

x44 x4 x20

COMPACT disc
Recordable
ReWritable

CD-RW
TYPE 74 650MB

CD-R TYPE 74

MP7040A
ATAPI INTERNAL MODEL
CD-R/RW Drive

MEDIA SOFTWARE DRIVE

RICOH Multi-Power!

1. System environment

This unit can be operated in the system environment explained here.

System requirements	CPU	100 MHz (or faster) Pentium (for 4x speed, 166MHz or faster recommended)
	Memory	Windows 98/95: 32MB or greator. Windows NT Workstation Ver. 4.0: 32MB or greator (64MB or over recommended)
Harddisk		Hard disk with average access time of 19msec or less, and data transfer speed of 1,200KB/sec or greater. 75MB or more free space. (The free space needed for writing depends on the quantity of data.)
Interface		Enhanced-IDE interface (as Primary Slave, Secondary Master, or Slave)
Drive bay		5.25-inch half height bay required
Power		+5V/+12V power socket required
Software Required OS		Windows 98/95, Windows NT Workstation Ver. 4.0 (Service Pack 3) or later*1
CD-R, CD-RW discs		Ricoh, Kao, Mitsubishi Chemical, Taiyo Yuden, Mitsui Toatsu, TDK or Kodak discs are recommend.

❏ Occasionally the CD-R and CD-RW discs written by the CD-R/RW drive cannot be read by other CD drives*2. These unreadable discs should be read using the CD-R/RW drive.

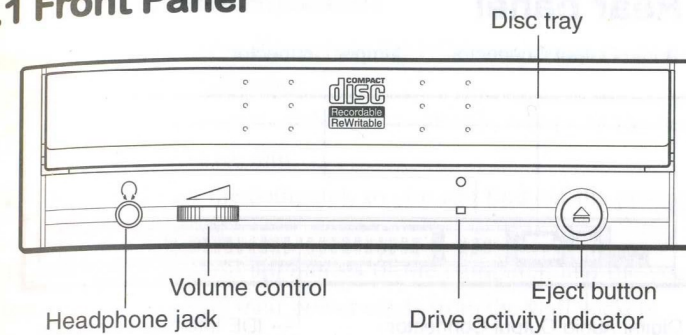*1 With Windows NT Workstation Ver. 4.0, only usable with Ahead® NERO.
*2 The disc written using the CD-R/RW drive might not be readable by CD-ROMs other than Multi-read compatible (Random UDF compatible) CD-ROMs.

Multiread compatible (Random UDF compatible) CD-ROMs are:
① CD-ROMs that can read low reflectance
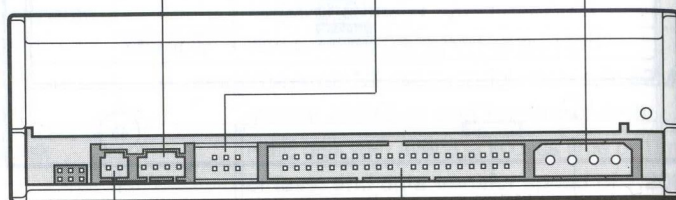② CD-ROMs that support Packet Write.

2. Drive functions and settings

2.1 Front Panel

Disc tray

Volume control   Eject button
Headphone jack   Drive activity indicator

Name	Function
Disc tray	This is the tray for the disc. Place the disc on the ejected disc tray, then lightly push the tray (or push the eject button) and the CD will be loaded. ⚠ Don't use force to pull out or push in the disc tray. This might cause damage to the loading section of the drive.
Eject button	This is the button used to eject or bring in the disc tray.
Volume control	This is used to adjust the output volume of the headphone jack. It can't be used to adjust the output volume for the audio output connectors on the rear panel. ⚠ Turn the volume down before turning on the power. Sudden loud noises can damage your hearing. This indicator is not illuminated unless the disk is currently being accessed.
Headphone jack	This jack is for connecting headphones or mini-speakers.
Drive activity indicator	This indicator lights orange when a disc is loaded into the drive. When the disc is being accessed, it flashes or lights orange. If no CD is loaded, the indicator does not light even when the power is turned on. When a illegal disc is loaded or some hardware trouble occurs, the indicator blinks.

2.2 Rear panel

Analog Audio Output Connector   Jumper Connector   Power connector

Digital Audio Output Connector   IDE Interface Connector

Name	Function
Power Connector	Connects to the power supply (5- and 12-V DC) of the host computer. ⚠ Be careful to connect with the proper polarity. Connecting the wrong way may damage the system (and is not guaranteed).
IDE Interface Connector	Connect to the IDE (Integrated Device Electronics) interface using a 40-pin flat IDE cable. ⚠ Do not connect or disconnect the cable when the power is on, as this could cause a short circuit and damage the system. Always turn the power OFF when connecting or disconnecting the cable.
Jumper Connector	This jumper determines whether the drive is configured as a master or slave. Changing the master-slave configuration takes effect after power-on reset.
Analog Audio Output Connector	Provides output to a sound card (analog signal).
Digital Audio Output Connector	Not used.

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3. Installing the Drive

3.1 Before Installation

Before installing the drive, please note the following points.
- your will need the following:
  - A Phillips head screw driver of a suitable size to fit the securing screws for the drive unit.
  - The manual for the computer, so you can find out the positions for the IDE controller.
- Turn off all peripheral appliances of the computer, and the computer itself , and disconnect their power cords from the wall sockets.
- Discharge any static electricity by touching the computer covers etc.
- Record the serial number of the drive unit in the box below.
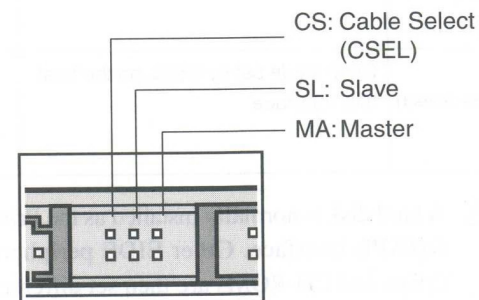
Serial No.	

3.2 Jumper Set Up

Before installation, set the jumper on the jumper connector on the rear panel. The drive can be connected as the Master or Slave on an EIDE (ATAPI) interface. When several (up to four) EIDE devices are connected, each must be set in a unique way. Specific knowledge of hardware and software is necessary to install the drive.

We cannot guaranty against direct or indirect damage resulting from improper connections. Ask your supplier for details of the installation procedure.

⚠ If two peripheral devices with the same settings are both connected to the Primary or to the Secondary EIDE bus, the host computer may fail to run, or may malfunction, so careful attention is necessary.

CS: Cable Select (CSEL)
SL: Slave
MA: Master

1. Specifications

< Drive : MP7040A>

Type	Internal type (bare drive)
Interface	Enhanced-IDE (ATAPI)
Data buffer memory	2MB
Data transfer speed	16.7MB/sec.
Write/Read speed (Ave)	20×: 2MB/sec. (Mode1, Mode2 Form1) <Only read> *1
	20×: 2.55MB/sec. (Mode2, Form2) <Only read> *1
	8×: 1.2MB/sec. (Mode1, Mode2 Form1) <Only read> *1
	8×: 1.36MB/sec. (Mode2 Form2) <Only read> *1
	4×: 600KB/sec. (Mode1, Mode2 Form1)
	4×: 681KB/sec. (Mode2, Form2)
	2×: 300KB/sec. (Mode1, Mode2 Form1)
	2×: 342KB/sec. (Mode2 Form2)
	1×: 150KB/sec. (Mode1, Mode2 Form1)
	1×: 171KB/sec. (Mode2 Form2)
	1×: 172KB/sec. (CD-DA)
Average access time	120m sec. or less
Initial processing time	CD-ROM 12 sec.
	CD-R/RW 17 sec
Mounting direction	horizontal/vertical(eject button at top when vertical)

Compatible formats

Format	<Write>	<Read>	<Play>
CD-DA	●	●	●
CD-ROM	●	●	
CD-Extra	●	●	●
CD-ROM XA	●	●	●
Photo CD	●	●	
CD-I	●	●	
CD-ROM + CD-DA	●	●	●
Video CD	●	●	●

Loading system	Tray type (automatic loading/eject)
Power	DC5V, DC12V
Power consumption	12w max (normal operation) 6w max (standby)
Weight	Less than 1.5 Kg.
Dimensions	146 × 193 × 41.5 mm (Width, depth, height)
Reliability	
Error Rate	10^{-12} bits or less
MTBF	100,000 hours or greater
MTTR	Within 30 minutes

Environmental Conditions	When operating	When not operating
Temperature	5°C to 40°C (No air cooling)	-30°C to 65°C
Humidity	5% to 90% R.H. (No condensation)	5% to 95% R.H. (No condensation)

* Drive speed drops to 8X when reading or overwriting CD-RW discs.

(continued)

Environmental Conditions	When operating	When not operating
Vibration	0.035mmpp (10 to 45Hz)	1 × 9.8 m/s² (5 to 300Hz)
	0.025mmpp (45 to 65Hz)	
	0.2 × 9.8 m/s² (65 to 150Hz)	
Shock	2 × 9.8 m/s² (6m sec. half sine)	40 × 9.8 m/s² (11m sec. half sine)
Environmental dust	Class 3 million or less (3 million particles of 0.5 micron dust per cubic foot or less)	

The drive's appearance and specifications may change without notice.

<Disc>

Characteristic	CD-R		CD-RW
Dimensions (External diameter)	φ120 mm		φ120 mm
(Internal diameter)	φ15 mm		φ15 mm
(Thickness)	1.2 mm		1.2 mm
Recording area (User area)	φ50 to 116 mm		φ50 to 116 mm
Recording capacity (Time)	74 minutes	63 minutes	74 minutes
(Capacity)*	650MB	550MB	650 MB
(Linear speed)	1.2 m/s	1.4 m/s	1.2 m/s
Track pitch	1.6 ± 0.1μm		1.6 ± 0.1μm
Substrate material	Polycarbonate		Polycarbonate
Recording material	Organic pigment (phthalocyanine) / Au or Ag lamination (Organic protective layer attached)		Ag-In-Sb-Te phase change recording material
Reflectance (R to p)	65% or more		15 to 20%
Eccentricity	70μm or less		70μm or less
Maximum camber angle	0.4°or less		0.4°or less
Recommended recording power	6 to 7mW(at λ:785nm, NA:0.5)		8 to 14mW(at λ:785nm, NA:0.5)
Playback power	1mW or less		1mW or less
Playback stability	10⁶ times or more (0.7mW)		10⁶ times or more (Playback power = 1mW)
Environment for use	-5 to 55°C		10 to 40°C
	5 to 95%RH		10 to 80%RH
Storage life	10 years or more (5 to 25°C, 5 to 60%RH Avoiding direct sunlight)		30 years or more 5 to 25°C, 5 to 60%RH
Number of times rewritable	----		1,000 times or more

* The above specifications are for Ricoh CD-R and CD-RW discs

* Recommended Discs
   CD-R : Ricoh, Kao, Taiyo Yuden, Mitsubishi Chemical, Mitsui Toatsu, TDK, and Kodak discs
   CD-RW : Ricoh, Kao, Mitsubishi Chemical discs

* This drive cannot be used with 80 mm CDs.

Parts No. R6730807