TEAC

CD-C68E CD-ROM Auto-changer

User's Manual

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***Changes in specifications and features may be made without notice or obligation.**

TO THE USER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a residential area. This device generates and uses radio frequency energy and if not installed and used in accordance with the instructions, it may cause interference to radio or TV reception. If this unit does cause interference with TV or radio reception, you can try to correct the interference by one or more of the following measures :

(a) Reorient or relocate the receiving antenna.
(b) Increase the separation between the equipment and the receiver.
(c) Plug the equipment into a different outlet so that it is not on the same circuit as the receiver.

If necessary, consult the dealer or an experienced radio/TV technician for additional suggestions.

CAUTION

Changes or modifications to this equipment not expressly approved by **TEAC CORPORATION** for compliance could void the user…Hs authority to operate this equipment.

INTRODUCTION

(1) System requirements

(a)IBM computer with Pentium 75MHz or better processor or IBM compatible computer.

(b)16MB or more memory space.

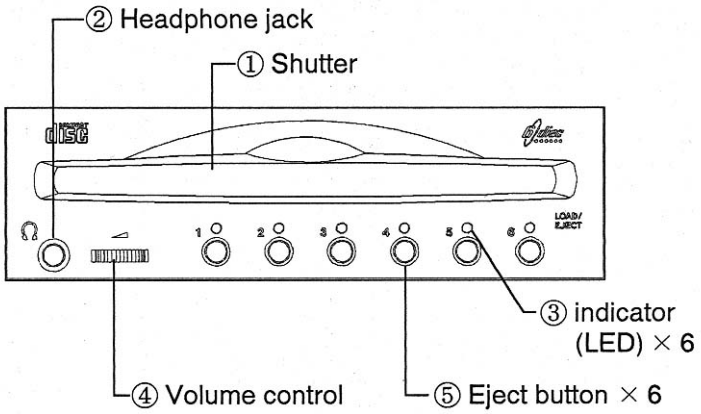
(c)Hard disk drive with an access time of 12msec or less.

(d)Microsoft Windows95 or Windows version 3.1.

(e)IDE interface

1. CONTROLS AND FUNCTIONS

1.1 Front Panel



1.Shutter

The shutter opens and closes in interlocked movement of the disc during loading and unloading. Do not open or close the dust door directly with your fingers. Doing so may cause damage or operational failure.

2.Headphone jack (phai 3.5mm)

Audio output jack for stereo headphone or external speakers.

Use a 3.5mm-diameter stereo mini-plug.

3.Indicators

Six indicators, one for each slot (disc storage space), light up or blink as follows:

(a) Steadily lit

Green : The disc loaded is not an audio one.

Amber: An audio disc is loaded.

(b) Blinking at intervals of 1.6 seconds

Audio playback is in progress.

(c) Blinking at intervals of 0.8 second

The disc is being loaded.

(d) Lit green and amber alternately at intervals of 0.4 second

The disc is being ejected or the shutter is opened.

(e) Blinking on and off three times at intervals of 0.4 second

You attempted to operate the eject button while the corresponding slot is eject-prevented.

(f) Blinking rapidly at irregular intervals

Host lead command/seek command is being executed.

(g) Blinking amber at intervals of 2 seconds

An error occurred which is ascribable to the disc. The indicator will turn off when ejecting the disc.

An error occurred which is ascribable to the system. The indicator will turn off when switching power off then on, before resetting the system.

4.Volume control

Adjusts headphone's volume.

5.Eject Buttons

Six buttons, one for each slot, offer the following functions:

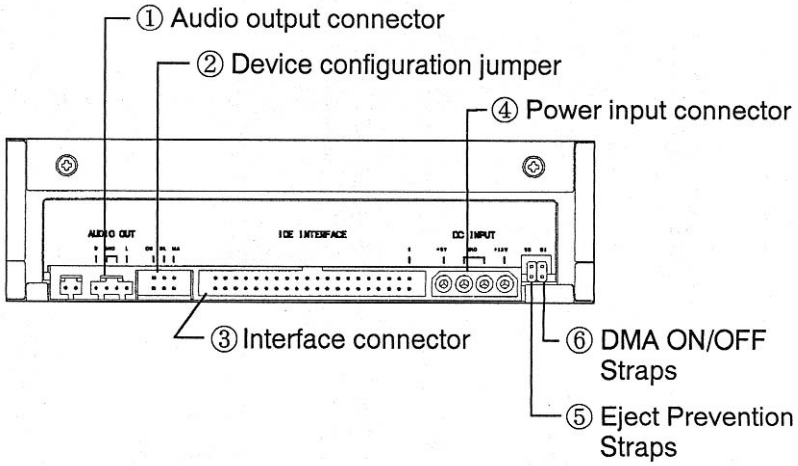
(a) When pressing a button and releasing it within less than 1 second, the disc in the corresponding slot is ejected.

(b) When holding a button for 1 second or more, audio playback starts, provided that a disc is previously loaded in the corresponding slot.

(c) After having started a disc to play, if you hold the button once more for 1 second or more (the button corresponding to the slot, the disc in which is playing), playback will skip to the next track.

(d) If you press a button and release it within less than 1 second, playback will stop.

1.2 Rear Panel



1.Audio output connector

For stereo audio signal output.

When driving external speakers, connect this connector to the audio input connector on the Sound Card or interface Card.

Note : Mating connectors : Molex 70066 “C” or “G” or equivalent.

Conector No.	Audio signal
1	L ch Signal
2	L ch Ground
3	R ch Ground
4	R ch Signal

2.Device configuration jumper

Selects the IDE CD-ROM’s Master, Slave or CSEL settings. This setting needs to be changed when making a daisychain connection with a hard disk drive, etc. This is factory-preset to Master.

3. Interface connector

Connect to the interface or IDE interface card using the 40-pin flat cable.

Cable-side mating connectors : 5320-40AGS1 Molex, or equivalent.

4. Power connector

Connect to the +5 V and +12 VDC power source.

Cable-side mating housing : 8981-4P Molex

Cable-side mating terminal : 8980-3L Molex

5. Eject prevention strap

S0 : Determines whether eject is allowed or prevented, as follows:

ON: Allowed

OFF: Prevented

PREVENT/ALLOW MEDIA REMOVAL command makes the tray possible to be released from the "prevented" status.

6. DMA ON/OFF Strap

S1: Determines whether DMA is on or off, as follows:

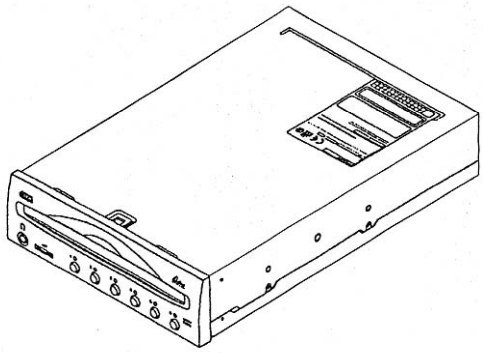
ON : DMA on

OFF : DMA off

2. CONNECTION TO A PERSONAL COMPUTER

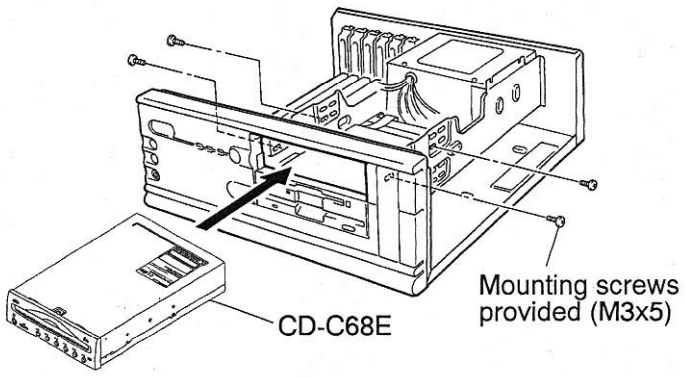
2.1 Drive Installation Directions

Install the CD-C68E into the personal computer horizontally so that the eject button is at right.



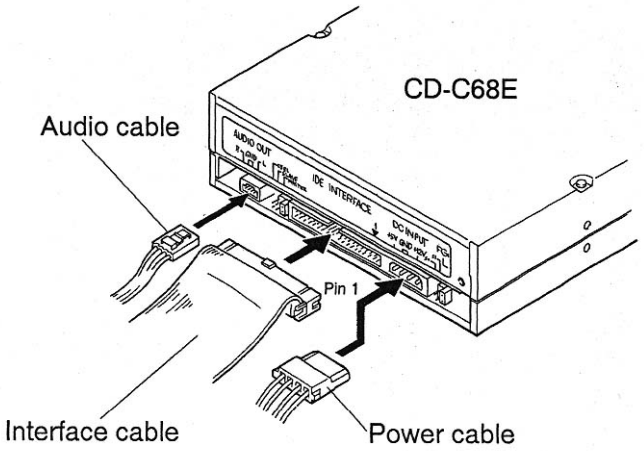
2.2 Installation and Connection to Your Personal Computer

(1) Switch OFF the personal computer and remove the blank panel fitted to the front of the 5.25-inch slot, then secure the CD-C68E using the provided screws.
If the mounting rails are necessary for installation in a personal computer, contact the personal computer
maker or dealer.
Note: Be sure to use mounting screws provided.
If longer than specified screw is used, the CD-C68E may be damaged.



(2) Connect the power cable, the IDE interface cable and the audio cable to the CD-C68E, respectively.

Note: The interface connector and audio connector are polarized. Be sure Pin 1 on all cable connectors match with drive connectors.



3. CONNECTION TO AUDIO EQUIPMENT

Line-level audio signals are available at the headphone jack on the CD-C68E or at the audio output on the rear by using a Sound Card.

Note: When using the IDE interface card or a sound card, read their manual before connection and follow instructions.

4. SOFTWARE INSTALLATION

4.1 Device Driver

For the CD-C68E to operate, you have to install the device driver in your personal computer. Follow the following instructions depending on OSs in use.

(1) DOS/Windows 3.1

Run the INSTALL.EXE file contained in the TEAC CD-ROM Changer Installation Disk for DOS-Windows 3.1 in DOS. The installation screen will then appear on the computer screen. Follow the instructions on the screen. When installation is complete, save the changes in the file by restarting the system.

(2) Windows 95

Refer to the “driver.txt” in the TEAC CD-ROM Changer Installation Disk for Windows 95/NT.

4.2 CD-player

(1) Windows 3.1 (CDP)

(a) Installation

Before anything else, build the [MCI] CD audio device driver in your computer by referring to the Windows user's guide.

Then, run the SETUP. EXE file in the TEAC CD-ROM Changer Installation Disk for DOS-Windows 3.1. Windows will automatically start and the setup screen will appear ; then, follow the instructions on the screen.

(b) Functions

The TEAC CDP is operated by clicking the desired button on the screen by mouse control.
The buttons offer the following functions:

POWER	: Ends the application TEAC CDP.
REPEAT	: Repeats all tracks of the disc.Can be used together with PROGRAM, SHUFFLE, or ALLDISC.
PROGRAM	: Plays a sequence of programmed tracks. For the details,see the TEAC CDP Help screen.
SHUFFLE	: Have tracks play in random order.
ALLDISC	: Plays the entire music disc. Can be used together with REPEAT, PROGRAM, or SUFFLE.
MUTE	: Reduces the volume to a minimum. Click the button again to un-mute.
CD IN/AUX IN	: Determines the input to feed the drive's output. See also Note.
◀◀ (Rewind)	: Moves back about 10 seconds.
▶▶ (Fastforward)	: Moves about 10 seconds in the forward direction.
▶/‖ (Play/Pause)	: Used to start playback, to interrupt playback, or to disable the pause.
■ (Stop)	: Stops playback.
⏮ (Reverse skip)	: Used to skip directly to the beginning of the current track or previous track.
⏭ (Forward skip)	: Used to skip directly to the beginning of the succeeding track.
TRACK 1-0	: Used to directly select specific tracks on the currently selected disc.
⏏ (Eject)	: Used to take out the currently selected disc.
▬ (CDP icon switch)	: Used to switch icon.
TIME	: Used to select either of the following time displays: Single Time, showing elapsed time from the beginning of the current track in play.Total Time, showing elapsed time from the beginning of the disc.
? (Help)	: Allows you to see CDP version information or get Help.
VOL. (Volume)	: Used to increase or decrease the volume.
DISC 1 to 6	: Used to change discs.
BALANCE	: Controls the relative level of the left and right sounds. To go back to the center position, press the mark "." in the center of the button.

Note : The volume control is effective either on CD-IN or AUX-IN, as selected.
It defaults to CD-IN. To switch the control to AUX-IN, use editors or the like to change the CD-IN to Aux Mode=AUX IN in [Config] session of CDP.INI.
In passing CDP uses the volume control on sound cards.
When no sound cards are used or depending on sound cards in use, you may not be able to control the volume. This is indicated by neither Volume, Balance, nor CD-IN/AUX-IN buttons appearing on the screen. Use then utility that comes with the sound card. For the details, see the sound card's manual.

(2) Windows 95 (CDP95)

(a) Installation

Run the SETUP.EXE file contained in the TEAC CD-ROM Changer Installation Disk for Windows 95/NT. The setup screen will appear; then, follow the instructions on the screen.

(b) Functions

The TEAC CDP95 is operated by clicking buttons on the screen by mouse control.
The functions of each button are the same with that explained earlier for the CDP, in paragraph (b) under (1) Windows (CDP).

4.3 Disc Change Utility

(1) DOS (CS.EXE)

(a) Installation

This utility is installed as a result of installing the device driver.

(b) Functions

CS is a utility that is executed when you respond to the DOS command prompt, the DOS that comes with the CD-C68E, and it offers the following functions in regard to the discs corresponding to slot numbers 1 to 6 (the numbers marked on the front bezel):

1. Ejecting CD
   C:\>CS-E [slot number]
2. Changing the current slot while in Single Drive Letter mode
   C:\>CS [slot number]

Note: You can use CS.EXE only while in Single Drive Letter mode. To use it, either move the prompt to the directory in which CS.EXE is contained or specify the necessary directory path into AUTOEXEC.BAT. If you are using drives or device drivers other than the TEAC ones, we cannot guarantee the correct functions.

(2) Windows 3.1 (CDInfo)

(a) Installation

This utility is installed as a result of installing the TEAC CDP.

(b) Functions

CDInfo is a Windows 3.1 version utility contained in CD-C68E, and offers the following functions in regard to the discs corresponding to slot numbers 1 to 6 (the numbers marked on the front bezel):

1. Displaying information on CD and the volume label.
   To get this display, either double-click the desired slot number, or right-click the slot number, then select “Change”.
2. Ejecting CD
   Right-click the desired slot number and select “Eject”.
3. Changing the current slot while in Single Drive Letter mode
   Either double-click the desired slot number, or right-click the slot number, then select “Change”.

Note: When multiple CD-ROM drives and CD-ROM Changer drives are connected, you can use up to 24 drive letters. If you are not using the TEAC drives or device drivers, we cannot guarantee the correct functions.

Tool Bars

 Check

Used to check the disc in all the slots currently connected.

 Quit

Used to quit the utility. The current window size, position, display mode are then automatically saved, and they reappear when stating the utility the next time.

(3) Windows 95 (CDInfo95)

(a) Installation

This utility is installed as a result of installing the TEAC CDP95.

(b) Functions

CDInfo95 is a Windows 95 version utility contained in the CD-C68E, and offers the following functions in regard to the discs corresponding to slot numbers 1 to 6 (the numbers marked on the front bezel):

1. Displaying information on CD and the volume label
   To get this display, right-click the desired slot number and select “Change”.
2. Ejecting CD
   Right-click the desired slot number and select “Eject”.
3. Changing the current slot while in Single Drive Letter mode Right-click the desired slot number and select “Change”.
4. Adding notes to the right of a slot number
   Right-click the desired slot number and select “Memo”. you can type a maximum of 32 characters. Your “Memo” reappears when starting the utility the next time.

Note: When connecting multiple CD-ROM drives and CD-ROM Changer drives, you can use up to 24 drive letters. If you are not using the TEAC drives and device drivers, we cannot guarantee the correct functions.

Menus

Change/Eject

Change : Displays information on the disc corresponding to the selected slot number.
Eject : Ejects the disc corresponding to the selected slot number.
Check All : Displays information on all the discs.

< In Single Drive Letter mode >

The disc corresponding to the selected slot number is assigned to the current drive letter.
CD Player or Auto run is automatically executed just after selecting a music CD or a disc containing Auto run, respectively.
A “v” mark is displayed to the right of the slot number corresponding to the current drive letter.
If you need to check the current drive letter, press F5 or View-Current Slot.

[View]

This is used to change the current display status. If you change the current view, the changed view becomes the default, and when restarting the system, the changed view will appear.

Tool Bar : Switches the tool bar on/off.
Status Bar : Switches the status bar on/off.
Detects the slot number that specifies the current drive letter.
Current Slot : Searches for the currently selected disc.

[Custom]

Auto Open : Automatically checks all the drives and slots when starting the system, and displays information on the discs in use.
System Tray : Registers in the right side of the task bar.
Soon Hide : Automatically returns to the task bar after a change or eject operation is complete.
If this utility is not registered in the task bar, it's not usable.

[Help]

Displays the Help file in CDInfo95 and information on its version.

Note: When executing “Change”, the application program automatically starts if the selected disc contains Auto Run or it is a music disc.
CDInfo95 displays a dialog box that allows you to check whether auto-executed application program is complete or not. If you attempt to check the next disc before completing auto-execution application programs, it is possible that an error occurs. If you want to continue to use “Change” of CDInfo95, press “Yes” after having ended the auto-executed application program. To disable Change, press “No”.

Tool Bar

 Change

Used to check the disc in the currently selected slot. See also the paragraph Change/Eject under Menus.

 Eject

Used to eject the disc in the currently selected slot. See also the paragraph Change/Eject under Menus.

 Task bar

Used to add this utility to the task bar’s icon display. (If this utility is not registered in the task bar, it’s not usable.)

 Help

Used to open the Help file in CDInfo95. (An alternative is to press F1.)

4.4 Changer Assistance Utility

The Changer Assistance Utility is a Windows95 utility which automatically makes the necessary settings for the TEAC Changer devices.

After the settings are changed, click the “Apply” button to execute the changes. If you do not want to change the settings, click the “Cancel” button. All changes (except Auto Run) take effect after the system has been restarted.

(1) Auto Run (automatic execution)

Enables or disables the Auto Run function.

When this function is enabled (check box is on), Auto Run is disabled for all connected CD-ROM drives.

(2) Auto Play (automatic play)

Enables or disables the Auto Play function. When this function is enabled (check box is on), Auto Play is disabled for all connected CD-ROM drives.

(3) Auto Insert Notification (automatic insertion)

Enables or disables the Auto Insert Notification function.

When this function is enabled (check box is on), Auto Insert Notification is disabled for all connected CD-ROM drives.

Click the “Apply” button to execute changes. Click “Cancel” if you don’t want to apply the changes. Changes take effect when the system is restarted.

(4) Sort Drive Letter (rearrangement of the drive letters)

Rearranges the drive letters.

When this function is enabled (check box is on), the drive letters of all connected CD-ROM drives are rearranged. When only one CD-ROM drive is connected, this setting is not required.

Click the “Apply” button to execute changes. Click “Cancel” if you don’t want to apply the changes. Changes take effect when the system is restarted.

Notes: Even when more than one CD-ROM drive is connected, rearrangement is not performed correctly in the following cases.

(a)The target IDs of two or more CD-ROM drives are the same.

(b)The LUN of the CD-ROM drive is discontinuous or abnormal.

(c)The device driver does not support the Changer.

(d)The registry is abnormal.

(e)Drive Space is being used.

(5) Multiple/Single Drive Letter mode

The Multiple/Single Drive Letter can be switched.

Click the “Apply” button to execute changes.Click “Cancel” if you don’t want to apply the changes. Changes take effect when the system is restarted.

Note: If the device driver Teacidec.mpd does not exist in C:\TEAC\SINGLE or C:\TEAC\MULTI directory, the dialog box for specifying the file will open. Specify the directory path for the directory in which Teacidec.mpd exists.

(6) Buttons functions

“OK” button

Applies each setting and quits the utility. When restart is required, the restart dialog box opens after you click this button. Each setting (except Auto Run) takes effect after the system has been restarted. To restart the system, select “Yes”. To continue, select “No”.

“Apply” button

Applies each setting. All settings are enabled when you click this button and the session ends. When restart is required, the restart dialog box opens after you click this button. Each setting (except Auto Run) takes effect after the system has been restarted.
To restart the system, select “Yes”. To continue, select “No”.

“Cancel” button

Ends session without applying the new settings.
If you have changed the settings and then change your mind, you can cancel the changes by clicking this button.

Note: Once you’ve applied the settings, it is not possible to restore the previous settings so be sure to create a backup copy of the registry.

“Help” button

Opens the help file of this utility. Click “?” on the required control icon in the upper right of the dialog box for assistance.

4.5 Multiple Drive Letter Mode and Single Drive Letter Mode

(1) Multiple Drive Letter mode

Normally the dedicated device driver is installed when connecting the CD-C68E. In this case different drive letters are assigned to the individual slots of CD-C68E. This is called the Multiple Drive Letter mode.

If the drive letter E for example is assigned to the first of the six slots, F is assigned to the second slot, and so on, as follows:

Slot 1 E:
Slot 2 F:
Slot 3 G:
Slot 4 H:
Slot 5 I:
Slot 6 J:

(2) Single Drive Letter mode

In this mode a drive letter is assigned to a drive, not to a slot as in the Multiple Drive Letter mode. In other words all the slots have one and the same drive letter; so, with the CD-C68E, accessing a specific slot is achieved by changing the current slot by pressing the desired slot button more than 1 seconds, or by using the Disc Change Utility.

The disc in slot 1 is the default disc and if the letter E is assigned to the first of the six slot drives, the screen will read:

Slot 1 E:

If you want to change the current disc slot to slot 2, use the Disc Change Utility to change the screen to:

Slot 2 E:

Note: To switch from Single Drive Letter mode to Multiple Drive Letter mode and vice versa, install the device driver (an alternative is to execute the Changer Assistance Utility).

4.6 Notes When Using

(1) Auto setting

Windows95's "Auto Insert Notification", "Auto Run" and "Auto Play" automatically execute the specified operations when a disc is loaded or unloaded. However, with some CDs - especially music CDs - are used, the disc may be switched unnecessarily. To prevent this, the auto settings are automatically disabled when the TEAC device driver is installed in the multi-drive mode. To enable these functions, use the Changer Assistance Utility.

When it is installed in the signal drive mode, the number of disc changes in the drive can be decreased even when all automatic settings are enabled.

Note: To decrease the number of disc changes when the Auto Insert Notification is enabled in the multi-drive mode, do not insert a disc in the arbitrary slot until it is required. This method can be also used to shorten the start-up time of the microcomputer.

(2) MCICDA DRV

When CDP is installed in Windows 3.1, the SYSTEM.INI (normally located in the directory in which Windows is installed) is changed as shown below to allow playback in all slots.

Before change : CDAudio = MCICDA.DRV

After change : CDAudio = MCICDA.DRV0
CDAudio1 = MCICDA.DRV1
CDAudio2 = MCICDA.DRV2
CDAudio3 = MCICDA.DRV3
CDAudio4 = MCICDA.DRV4
CDAudio5 = MCICDA.DRV5

If you have any operational problems after installation, restore the setting before changing.

(3) Changer Assistance Utility

The Changer Assistance Utility lets you edit various registry key data.

Do not forcibly interrupt key data editing (e.g. reset) as this may delete the registry. Be sure to back up the registry before editing the data.

We are not responsible for inadvertent loss or destruction of the registry caused by executing this utility or for any errors which make restart impossible.

(4) Drive letter

If the device driver is not installed properly, only one drive letter may be displayed even in the multi -drive mode. In this case, click System in the control panel to check the property in the device manager(hard disc controller).

Also, if the changer drive is used in a system which users (or has used) a CD-R drive, only one drive letter may be displayed even in the multi-drive mode. Contact your CD drive manufacturer or dealer if you have any problems.

(5) Enhanced CD

Most enhanced CDs such as CD-Extra are not designed with changers in mind. As a result, these types of CDs may not operate normally in the changer drive. For best results, always be sure to insert enhanced CDs in Slot 1. If you still have problems, contact your CD manufacturer or dealer.

(7) Drive Space (compression drive)

When the hard disk is compressed with of Windows95's Drive Space, a host drive is made. Because of this host drive, there may no be enough drive letters to assign to the changer drive.

The drive letter assigned to the host drive is normally H:. For example, when Slot 1 in the changer drive is D: and the drive letter of the host drive is H:, each drive letter of the slots becomes D:, E:, F: , G: and I: respectively. As a result, the slot for H: (assigned to the host drive) is not shown. To avoid this problem, start up Drive Space to change the derive letters and restart the system.

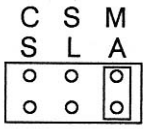
Drive Space is provided with a setting that allows you to hide the host drive. If the drive letter are changed with this setting on, the drive letters before the change are not deleted. As a result,these letters will not displayed if they are assigned to the changer driver slots.

To avoid this, start up Drive Space again and release the setting that hides the host drive, then change the drive letters.

5. STRAP SWITCH

5.1 CD-ROM Drive Device Setting

The strap (jumper) is factory-preset as follows:



	CS	SL	MA
MASTER	–	–	ON ← Factory-preset
SLAVE	–	ON	–
CSEL	ON		

Note: When setting the mode using these straps, be sure to switch off the power of the CD-ROM drive.

6. SPECIFICATION

1. Disc	
Applicable disc	CD-ROM Mode-1, CD-DA CD-ROM XA Mode-2 Form-1, Form-2 Photo-CD (Multi-session) CD-i Video CD, Enhanced CD
Disc diameter	12cm
Rotational speed (sextuple)	Inner tracks: 4,240rpm Outer tracks: 1,600rpm
2. Drive performance	
Data transfer rate	Sustained: 1.2MB/sec, Burst: 16.6MB/sec (PIO Mode-3, DMA Mode-1)
Access time (1/3 stroke)	190msec Typical, as specified in "TEAC in-house" specifications
Data buffer capacity	128KB
Optical pickup	
Laser	Semiconductor laser
Slide mechanism	Gear motor
Spindle motor	Brushless motor
3. Error rate	Mode-1: 1 block/10^{12} bits, Mode-2: 1 block/10^{9} bits
4. Front panel	
Button	Eject button × 6
Indicator (LED)	Double-color indicator × 6
Headphone output	Stereo mini-jack (ϕ 3.5mm) 5mW+5mW
Volume control	Thumb-wheel knob
5. Rear panel	
Required power	+5VDC, 0.5A, +12VDC, 0.35A (average)
Interface connector	ATAPI
Audio output	Line out 0.85Vrms±3dB
Strap switch	Device configuration strap
6. Operating environment	
Place of operation	Temperature 5 to 45°C, humidity 20 to 80% (noncondensing)
Place of storage	Temperature -30 to 55°C , humidity 10 to 80% (noncondensing)
7. Dimensions/weight	
Dimensions (WHD)	146 × 42 × 215mm (excluding front bezel)
Weight	1,050g
8. Reliability	
MTBF	50,000POH (Duty 10%)
Disk Tray loaded	15,000 times

TEAC CORPORATION
CD-C68E Document Ver. 1.0a 97/02/20