1. SCOPE

This is hardware specification of the TEAC CD-211E-900 built-in type CD-ROM drive (hereinafter referred to as CD-ROM drive or simply drive). As for the software specification, refer to "CD-211E-900 Software Specification".

2. OUTLINE

The outline of this CD-ROM drive is given in Table 2-1.

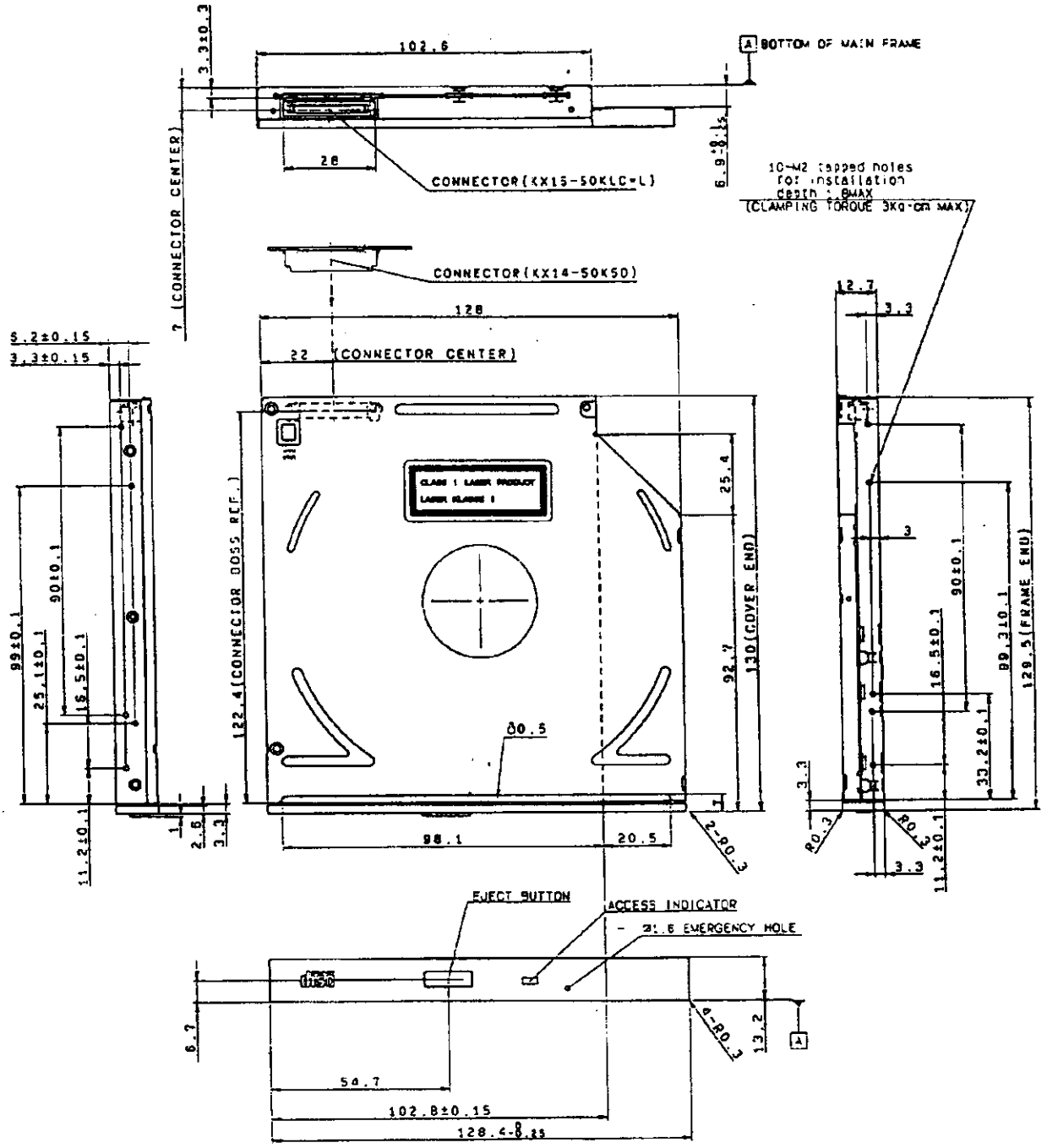
(Table 2-1) Outline of the specification

Model name	CD-211E / CD211PE
TEAC P/N	19770209-00
Applicable safety standards	UL, CSA, TÜV
Data transfer rate	16.7MBytes/sec. max., 1,632kB/sec. average
Average access time	200msec. average
Disc speed	4,280rpm max.
Host interface	IDE (ATAPI)
Power source	+5VDC
Starting time	8sec. typical
Applicable discs	CD-DA CD-ROM Mode 1, Mode 2 CD-ROM XA Mode 2 (Form 1, Form 2) Photo CD (single/multi-session) Enhanced CD
Front bezel	Light gray
Eject button	Light gray
Access indicator	Amber
Factory-preset strap settings: Drive setting Test mode	 Fixed to master (CSEL signal not used) OFF

3. CONSTRUCTION

3.1 External Construction

(1) Dimensions
  (a) Height : 12.7mm (excluding the front bezel)
  (b) Width : 128mm (excluding the front bezel)
  (c) Depth : 130mm (excluding the eject button)
(2) Weight : 180g or less
(3) Disc clamp system : Ball clamp
(4) Loading : Manual loading using the tray
(5) Ejection
  (a) Manual eject using the eject button
  (b) Automatically eject using the command
(6) External view : Refer to Fig. 3.1-1.



(NOTE) THIS SIDE VIEW IS FOR BEZEL ONLY

(±0.4)

(Fig. 3.1- 1) External view of the drive

Rev.E

5. ENVIRONMENTAL CONDITIONS

The environmental conditions as specified here do not include the environmental conditions of the disc. The environmental conditions of the disc should follow the specifications of the applicable disc.

(1) Ambient temperature
- (a) During operation : 5 to 51.7°C
- (b) During non-operation : –20 to 60°C
- (c) During transportation (packaged) : –20 to 60°C

(2) Temperature gradient
- (a) During operation : 11°C/hour or less (noncondensing)
- (b) During non-operation/transportation : 20°C/hour or less (noncondensing)

(3) Relative humidity
- (a) During operation : 8 to 80% (noncondensing) provided that the maximum wet-bulb temperature is 29.4°C or less.
- (b) During non-operation/transportation : 5 to 90% (noncondensing) provided that the maximum wet-bulb temperature is 32°C or less.
- (c) During transportation (packaged) : 5 to 95% (noncondensing) provided that the maximum wet-bulb temperature is 32°C or less.

(4) Vibrations
- (a) During operation:
  - When installed horizontally : 0.2G or less
  - When installed vertically : 0.1G or less

  provided that the sweep frequency is 5 to 300Hz and sweep rate, 1oct/min.
- (b) Transportation (packaged) : 2G or less provided that the sweep frequency is 5 to 300Hz and sweep rate, 1oct/min.

(5) Shock
- (a) During operation (free from malfunction) : 5G or less (half-sine shock pulse; 11msec, intervals; 5sec) excluding while the CD-DA is playing.
- (b) During non-operation/transportation : 60G or less (half-sine shock pulse; 11msec)

(6) Dust : office environment

(7) Cooling : natural air cooling

6. RELIABILITY

(1) Mean time between failures (MTBF) : 60,000POH or more (the frequency of use should be 10% at normal temperature and humidity)

(2) Mean time to repair (MTTR) : 30minutes

(3) Loading/ejecting life : 10,000times or more

(4) Power ON/OFF life : 60,000times or more

(5) Error rate

(a) Read error rate : MODE 1 and MODE 2 (FORM 1): once per 10^{12} bits or less
MODE 2 (FORM 2) and CDDA : once per 10^{9} bits or less

(b) Seek error rate : once per 10^{6} seeks or less

(6) Self-diagnosis

(a) When power is switched ON : Various controllers, ROM, RAM, buffer, ECC circuit, etc.

(b) When disc is inserted : Servo circuit, signal processors, etc.

7. SAFETY STANDARDS

The drive complies with the following safety standards:

(1) UL standard

(2) CSA standard

(3) TÜV standard

8. FRONT INDICATOR

(1) Location : Refer to Fig. 3.1-1.

(2) Size : 4.7mm × 1.8mm

(3) Color : Amber
Peak wavelength = 585nm

(4) Lighting conditions

(a) Continuous on

- During seek
- Transfer of the read data to the host is under way.

(b) Flashing at intervals of 1.6 second

- While audio is being played

(c) Flashing at intervals of 0.8 second

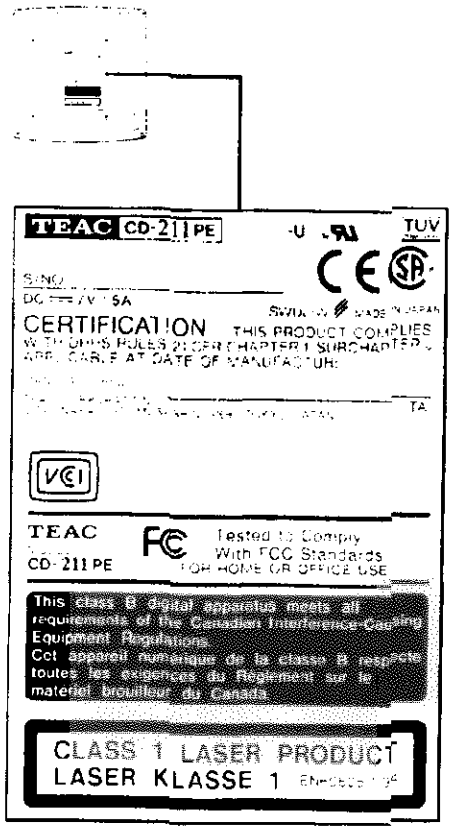
- From POR or tray loading to the end of TOC read (when the disc is present)
- From POR or tray loading to the end of detecting the disc (when the disc is not present). If an error which is considered to arise from the disc occurs, flashing continues until the disc is ejected. If an error which seems to rest with the drive's hardware, flashing continues until the power is switched OFF.

SAFETY INFORMATION (CD-211PEK)

CAUTION

USE OF CONTROLLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

BOTTOM



Optical pickup	
Type	: HPC-5
Manufacturer	: SHARP Corporation
Laser output	: Less than 0.5mW on the objective lens
Wavelength	: 770-795nm

Declaration of Conformity

Model Number	: CD-211PE
Trade Name	: TEAC
Responsible Party	: TEAC AMERICA,Inc.
Address	: 7733 Telegraph Road,Montebello, California,U.S.A
Telephone number	: 1-213-726-0303

This device complies with part 15 of the FCC rules.Operation is subject to the following two conditions : (1) This device may not cause harmfull interference,and (2)this device must accept any interference received,including interference that may cause undesired operation.

CONTENTS

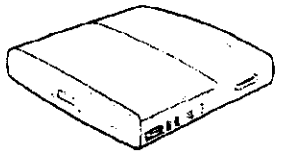
INTRODUCTION

(1) System requirements for using drive kit.

(a) Pentium 75MHz or higher-model IBM computer or IBM compatible computer.
(b) 850KB hard disk drive capacity for software installation.
(c) PCMCIA card slot.
(d) Windows3.1 or higher or Windows95.

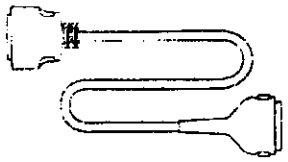
(2) Contents

Your CD-ROM drive kit includes the following contents. Open the package to confirm the contents.

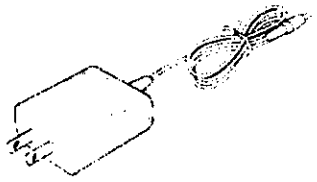


(1) CD-ROM drive

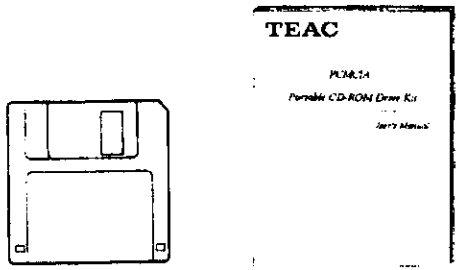
(2) TEAC PCMCIA/IDE card (TypeII PCMCIA) x 1



(3) IDE cable x 1



(4) AC adapter x 1

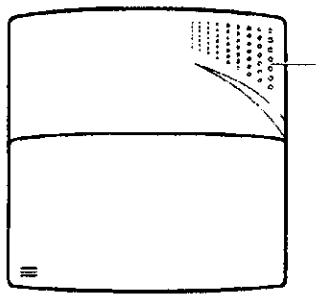


(5) TEAC PCMCIA/IDE card driver disc x1

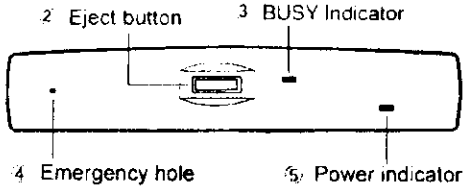
(6) User's Manual

1 NAMES OF PARTS AND THEIR FUNCTIONS

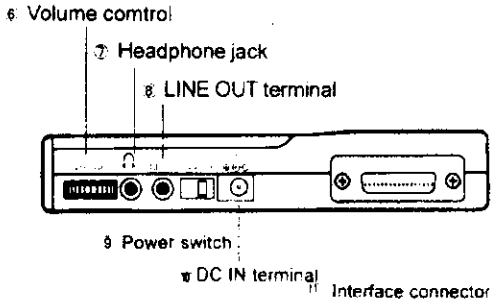
TOP



Front Panel



Right Side Panel



(1) Monaural speaker

(2) Eject button

Press this button to open the disc tray.

(3) BUSY indicator

The indicator lights in Seek, Play or Read operation.

(4) Emergency hole

When the power is switched OFF and the eject button does NOT function, insert a metal rod (diameter of 1.2mm or less) into this hole at a right angle to the front panel, then push the rod to eject the disc. Do this only when the BUSY indicator is NOT lit.

(5) Power indicator

The indicator lights when the CD-ROM drive power is turned on.

(6) Volume control

Adjusts the audio output level when a headphone is connected to the headphone jack.

(7) Headphone jack

Audio output jack for stereo headphone or external speakers.Use a 3.5mm-diameter stereo mini-plug.

(8) LINE OUT terminal

This is a connector terminal for audio equipment.Use a 3.5mm-diameter stereo mini-plug.

(9) Power switch

Switches the CD-ROM drive power ON/OFF.

(10) DC IN terminal

Connect the provided AC adapter to the CD-ROM drive.

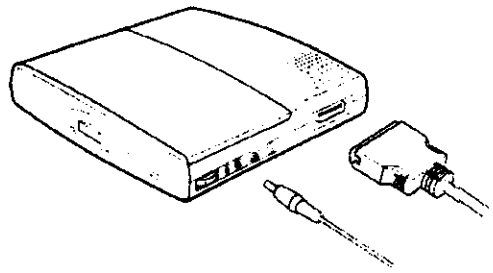
(11) Interface connector

Connect the Interface connector to the provided IDE cable.

2. CONNECTION TO A PERSONAL COMPUTER

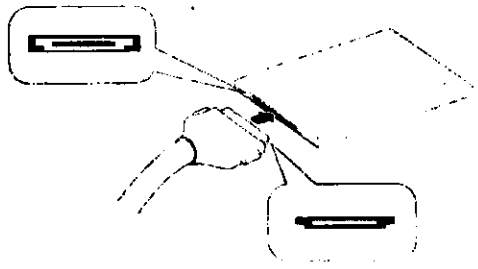
(1) Connection of cables

Confirm that the power switch of the CD-ROM drive is OFF. Connect the provided IDE cable to the interface connector Then connect the AC adapter to the DC IN terminal.



(2) Connection of PCMCIA/IDE card

Connect the opposite terminal of the IDE cable to the provided PCMCIA/IDE card. Insert the terminal horizontally and firmly in the specified direction until the click sound is heard.



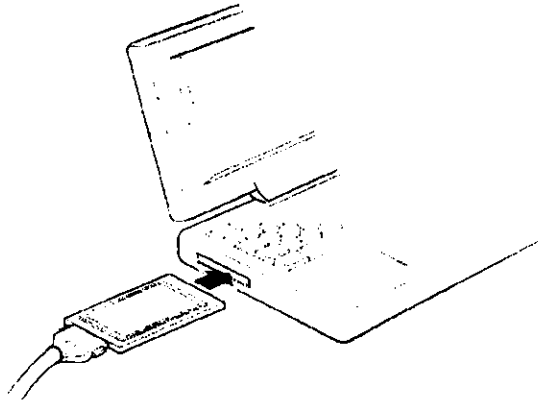
(3) Insertion into the card slot

(a) In Windows 95 environment

It is not necessary to insert the PCMCIA/IDE card into your PC at this time, since it will be inserted as per Item 3. Software installation below.

(b) In DOS or Windows3.1 environment

Confirm that the power of the PC is OFF, then insert the PCMCIA/IDE card into the PC card slot with the arrow mark facing upward. Connect the AC adapter to the AC100V power outlet. Turn the power switch of the CD-ROM drive ON, then turn the PC power ON, in this order.(REVERSE this order when turning the power switches OFF.)



3. CONNECTION TO AUDIO EQUIPMENT

The CD-ROM drive's headphone jack or the LINE OUT output connector outputs the LINE OUT audio signal.

4. SOFTWARE INSTALLATION

It is necessary to install a device driver in order to use the drive kit. Since installation procedures differ in Dos/Windows 3.1 and Windows 95 environments, follow installation procedures for your own PC environment. Installation methods for each OS are described below.

4.1 DOS/Windows 3.1 environment

It is necessary to install drivers such as card service, socket service, etc. supplied from a PC maker into CONFIG. SYS in order to use the PCMCIA card in DOS/Windows 3.1 environment. Such drivers must be installed before installing the TEAC PCMCIA/IDE card driver. After installation of the card service, etc., insert the TEAC PCMCIA/IDE card driver disk into the floppy disk drive. Select the drive which contains the TEAC PCMCIA/IDE card driver disk. Assuming that the floppy disk drive is "A:", type "install" and press the Enter key as follows.

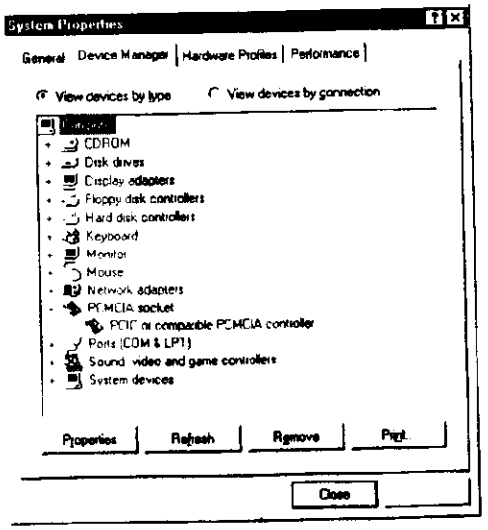
A: \>install [Enter]

The Installing screen appears. Start installation. This is an interactive type installer. If you follow on-screen instructions, installation is easy.

4.2 Windows 95 environment

(1) Installation of Windows 95 driver

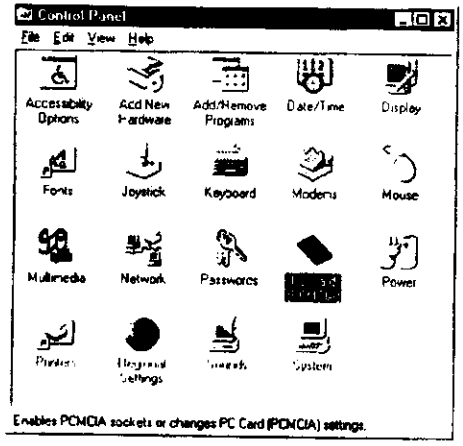
The PCMCIA socket must be recognized by Windows 95 to use the PCMCIA card. To confirm that the PCMCIA socket is recognized normally, select "Setting" - "Control Panel" from the Start Menu and double-click the "System" icon to open the "System properties" window.



System properties window

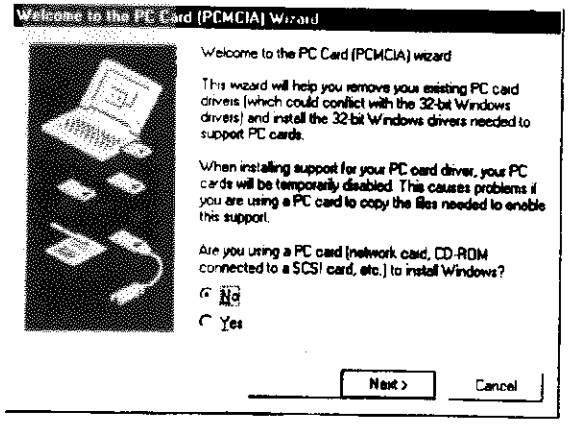
Double-click the item "PCMCIA socket" to indicate devices installed under it. (Names of devices differ depending on models of personal computers.) If an x mark is on an icon of devices, the PCMCIA socket is not recognized. In this case, it is necessary to install the PCMCIA driver using the "PCMCIA Card Wizard".

Start the " PC Card Wizard" by double-clicking the "PC Card (PCMCIA)" icon in the "Control Panel".



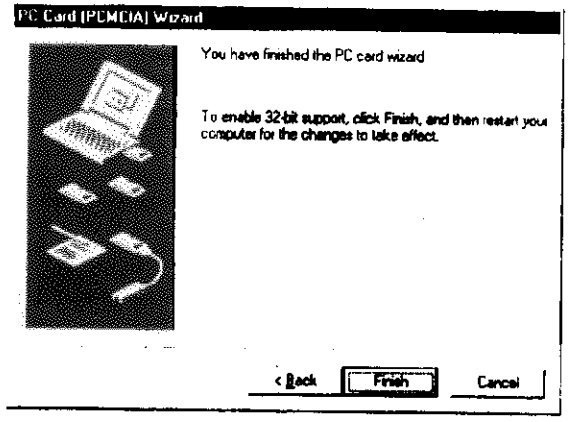
Control panel window

Perform installation according to the message in the PC Card Wizard.



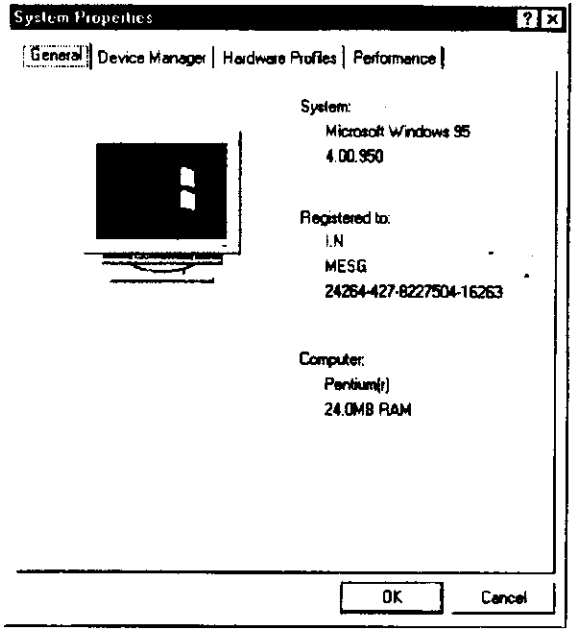
PC Card Wizard window at initial stage

Follow the menu on the PC Card Wizard window and the PC Card Wizard will set Windows 95 automatically Restart your PC to complete installation and to use the PCMCIA socket driver



PC Card Wizard window at finishing stage

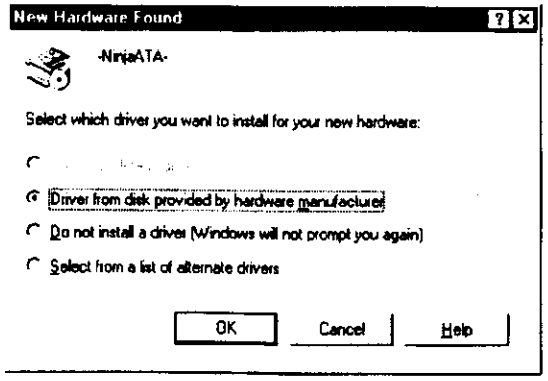
When the PCMCIA socket is recognized, proceed with installation of the TEAC PCMCIA/IDE card driver. This installation procedure differs depending on Windows 95 release number. Perform installation after confirming the release No. of your Windows 95. To confirm the release No., open the "Control panel" window and double-click the "System" icon. The figures below "Microsoft Windows 95" in "System:" is the release No. If your release No. is "4.00.950" or "4.00.950A", see Procedure 1. If your release No. is "4.00.950B", see Procedure 2.



System properties window

Procedure 1:

Since the PCMCIA card is compatible with Plug and Play, just insert the TEAC PCMCIA/IDE card into the slot without using the Hardware Wizard. Since Windows 95 detects this as new hardware, install the driver



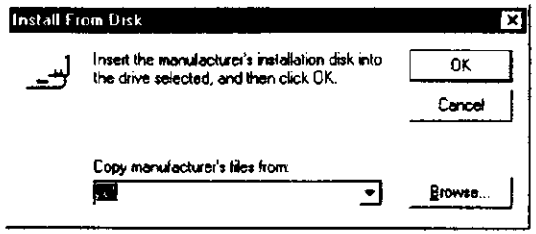
Window at detecting hardware

When the window above opens after inserting the card, select "Driver from disk provided by hardware manufacturer" and click "OK".

Precaution.

When using the driver provided in Windows 95 instead of the TEAC PCMCIA/IDE card driver, select "Select from a list of alternate drivers. Then select "Hard disc controllers", "Standard hard disk drivers" and "Standard IDE/ESDI Hard Disk Controller" in this order

Select "Driver from disk provided by hardware manufacturer" and a message requesting the floppy disk containing the driver appears.

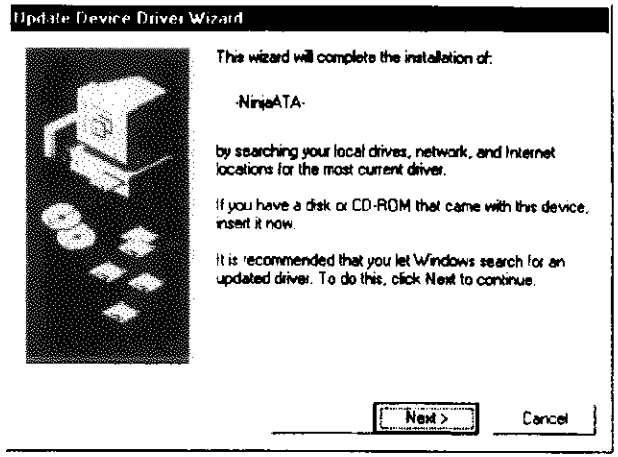


Message window of floppy disk request

Insert the TEAC PCMCIA/IDE card driver disk into the floppy disk drive and specify the drive No. The driver is read automatically from the floppy disk and installation will be completed.

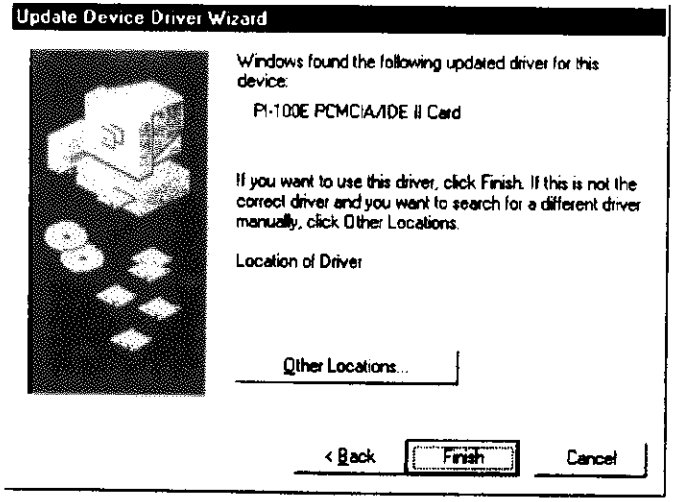
Procedure 2

Since the PCMCIA card is compatible with Plug and Play, just insert the TEAC PCMCIA/IDE card into the slot without using the Hardware Wizard. Since Windows95 detects this as new hardware, install the driver



Window when detecting hardware

When the window above is indicated after inserting the card insert the TEAC PCMCIA/IDE card driver disk into the floppy disk drive and click "Next".The floppy disk is read and the TEAC PCMCIA/IDE card driver is automatically detected. When the driver is detected, the following confirmation message is indicated



Screen indication when the driver is detected

Click "Finish" when the driver is detected. This ends the installation.

5. DESCRIPTION OF THE TEAC PCMCIA/IDE CARD DRIVER UTILITY

5.1 PI100E. MPD

This is a SCSI mini port driver for Windows95. It is required when using the TEAC PCMCIA/IDE card in Windows95. (The driver is for SCSI type while the card is IDE/ATAPI specification.)

Option Switch

Specification of the option switch will be made with the following dialogues

Control Panel
-> System
-> Device Manager
-> SCSI controller
-> PI-100E PCMCIA/IDE II Card
-> Property
-> Setting.

Input the following in the setting column of the adapter and restart Windows 95 to make these settings valid.

The following parameters can be set.

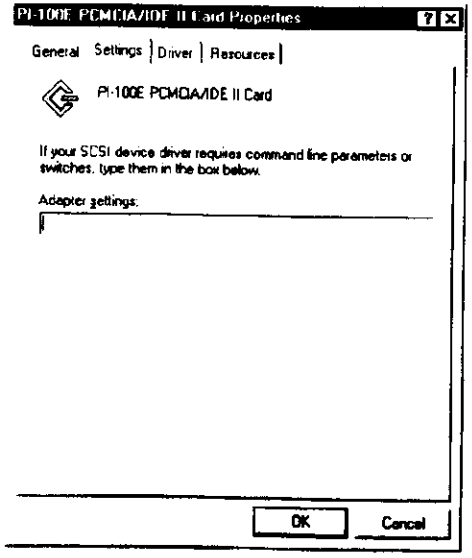
(1) mmio: This sets the transfer mode to the memory map mode.

(2) pio: This sets the transfer mode to the 16-bit PIO mode

(3) nomult: The Multiple command is not used when an IDE HD is connected. It is used when the nomult parameter is in default.

(4) mult=x: Specifies the number of blocks of the Multiple command. x is 2, 4, 6, 8 or 16. Default value is 8.

(5) mmspd=x: Specifies the PCMCIA device speed when performing the memory mapped transfer. x is 0, 1, 2 or 3. 0 is the maximum speed and 3 is the minimum speed. Default value is 3. The transfer mode, when no option is specified, is the 32 bit PIO.



Parameter setting window

Precautions:

(1) When making a partition or making a change in your HDD, the FDISK of Windows 95 is used. However, some advance preparation is needed.

1. Change the property of the drive of which you wish to change the domain. Choose dialogs as follows: "Control Panel" - "System" - "Device manager" - "Disk drives" - (Drive you wish to change partition) - "Properties"- "Settings"
2. Press the "Int13 unit" check box in the dialog. When "Restart" is indicted, select "Yes" to restart.
3. When you use a PC/AT compatible computer, execute the FDISK at DOS prompt

5.2 TPICLI.SYS

This is a card service client driver for DOS. This driver allocates I/O ports or IRQ when using the TEAC PCMCIA/IDE card in DOS or Windows3.1.

Setting of CONFIG.SYS

DEVICE = [Drive\Path]\TPICD.SYS /Mxxx /Ix

/Mxxx : Specifies the base I/O of the TEAC PCMCIA/IDE card.Any one of these settings is valid: xxx = 180, xxx = 190 or xxx = 1A0

/Ix : Specifies the interrupt request (IRQ) number of the TEAC PCMCIA/IDE card. x=3, x=5, x=6, x=12, x=14 or x=15 is valid.

5.3 TPICD. SYS

This is a CD-ROM driver for DOS. Installation of this driver is required when connecting the CD-ROM drive to the TEAC PCMCIA/IDE card in the ATAPI specification in DOS or Windows3.1.

Setting of CONFIG.SYS

DEVICE = [Drive\Path]\TPICD.SYS /D:xxxx /Ix /U:x

/D:xxxx : Device name such as "MSCD001"

/Ix : Specifies the CD-ROM drive unit to be recognized.x=0: Master. x=1: Slave(All drive units will be searched and recognized when this is in default.)

/U:x : Effectuates specified number of units in LUN.x=0-7 (initial setting: x=0)