

# PL-HD220

## Installation Guide

This hard disk drive unit is made by Pro-face for use with its panel-type computers, hereafter referred to as the "PL". This 2.5 inch 20GB hard disk is designed to be installed inside the PL.

Corresponding PL units: PL-5900/PL-5910/ PL-X900/PL-X920 Series units

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*Pro-face: Digital Electronics Corporation (in Japan and other countries)*

*MS-DOS, Windows: Microsoft Corporation (USA)*

### WARNINGS

- **Be sure to check that the PL's power is disconnected before installing the unit, in order to prevent an electrical shock.**
- **Do not attempt to modify or open the PL-HD220, since it can cause a shock or fire.**
- **When installing the PL-HD220, be sure to read the following "3. Installation" section's information completely to insure that the unit is correctly installed.**

#### **To Prevent Accidents**

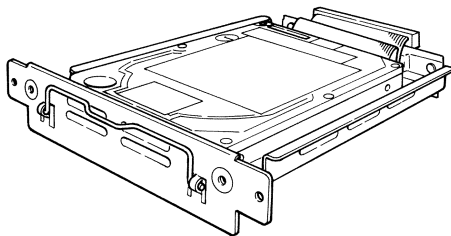
- Since the PL-HD220 is a precision instrument, be sure it is neither hit by nor pressed strongly against another object. After unpacking, be sure the unit is not dropped or jolted during installation. Also, a PL built in to a larger unit (i.e. operation panel) should be removed and packed separately prior to shipping.
- Be sure water, liquids or metal particles are not allowed to enter the PL-HD220. Any of these may cause either a breakdown or an electrical shock.
- Do not place or store this unit in a location where there is direct sunlight, excessive heat, dust or vibration.
- Do not store or operate this unit near chemicals, or where there are chemical fumes.
- Do not allow anyone other than Pro-face's own service staff to perform maintenance or adjustments to this unit.
- Do not move or shift the PL while the PL-HD220 is installed and the PL unit's power is ON.

- Do not use the PL-HD220 in locations where corrosive gasses are present, since they can lead to a hard disk breakdown.
- To prevent damage to file data, be sure to shut down the PL unit's OS before turning OFF the main power.
- To extend the life of your PL unit's hard disk, use the BIOS menu [POWER MANAGEMENT SETUP] - [HDD Power Down] setting to turn the HDD unit's power OFF when the HDD is not being used. Recommended setting is the factory setting of "5Min". When using Windows®2000, use the [Start] - [Settings] - [Control Panel] - [Power Options] - [Turn off hard disks] setting to turn the HDD unit's power OFF when not in use. Recommended setting is [After 5 mins].

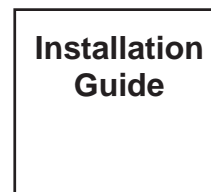
## Package Contents

Please check that the following items are all included in your package.

■ **PL-HD220 (1)**



■ **Installation Guide (PL-HD220)**



Pro-face has taken the utmost care to insure the quality of this product when it was shipped, however, should, for any reason, problems or damage have occurred during shipping, please contact your Pro-face representative immediately for service.

## 1 Hardware Specifications

### ■ Features

Capacity	20GB
Seek Time	12msec (TYP)
Power Consumption	At Startup : 4.5W (TYP)
	Read/Write : 1.6/1.6W (TYP)
	During Wait : 0.2W (TYP)
Interface	ATA
Lifetime	5 years, or 20,000 operating hours, whichever comes first



- The PL-HD220 has a finite usage lifetime. Therefore, be sure to back up all HDD data periodically or prepare a backup HDD unit.
- The Hard Disk lifetime specified here may be reduced due to unforeseen environmental factors, however, the disk should operate for 20,000 hours or approximately 5 years, whichever comes first, at an operating temperature of 20°C and approximately 333 hours of operation per month. (HDD access frequency of 20% or less)

## ■ Environment

Operating Temperature	5°C to 50°C
Storage Temperature	-10°C to +60°C
Ambient Humidity	10%RH to 85%RH (no condensation, Wet bulb temperature: 29°C or less)
Noise Resistance (via Noise Simulator)	Noise Voltage: 1500Vp-p
	Pulse Width: 50ns, 500ns, 1μs
Electrostatic Discharge Immunity	6kV
Vibration Resistance	4.9m/s <sup>2</sup> (10Hz to 25Hz) (When Operating)
Shock Resistance	3920m/s <sup>2</sup> (1ms, Half-sine shock pulse)



- When using a PL optional unit, be sure to check that unit's specifications for any special conditions or cautions that may apply to its use.
- Since the PL unit's hard disk drive (HDD) is a consumable item, i.e. it has a limited lifetime, be sure to back up its data regularly and prepare a spare HDD unit.
- Using the Hard Disk in an environment that is excessively hot and/or humid will shorten the disk's operation life. A wet bulb temperature of 29°C or less is recommended, which is equivalent to the following data.

Temperature	Humidity
at 35°C	no higher than 64%
at 40°C	no higher than 44%

- To extend the life of your PL unit's hard disk, use the BIOS menu [POWER MANAGEMENT SETUP] - [HDD Power Down] setting to turn the HDD unit's power OFF when the HDD is not being used. Recommended setting is the factory setting of "5Min". When using Windows®2000, use the [Start] - [Settings] - [Control Panel] - [Power Options] - [Turn off hard disks] setting to turn the HDD unit's power OFF when not in use. Recommended setting is [After 5 mins].

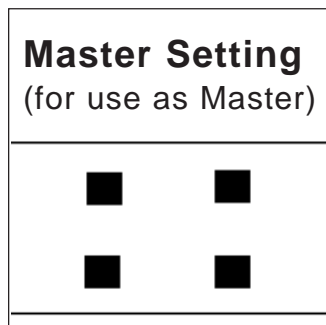
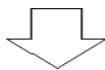
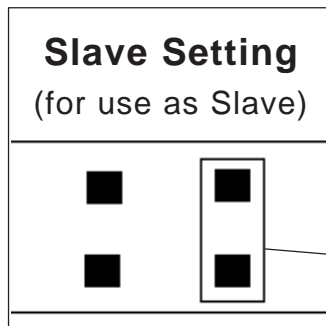
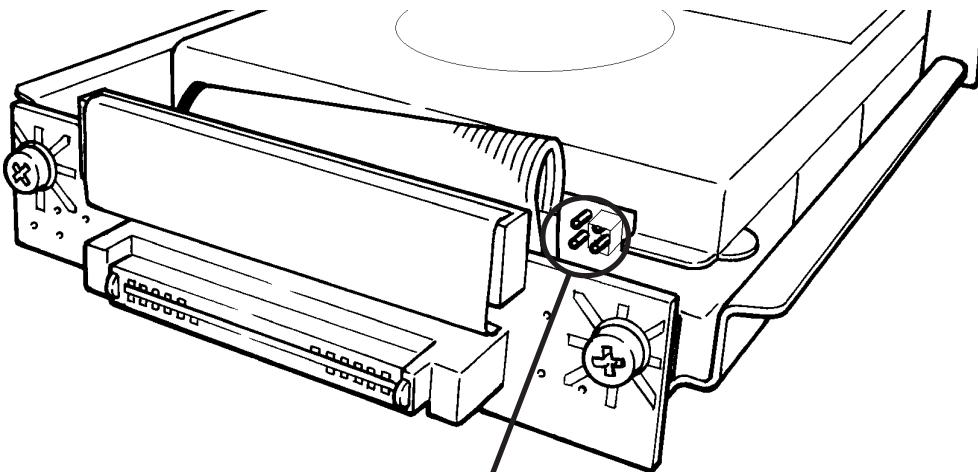
## 2 Hard Disk Unit Settings

The PL-HD220 is factory set for use as the PL's Slave drive (Second Hard Disk).  
When using the PL-HD220 as the PL's Master drive (First Hard Disk), be sure to perform the following setup.



- All Pro-face PL units have a built-in hard disk. This hard disk, when shipped, is set as the PL's Master. Therefore, when an additional HDD unit (PL-HD220) is used, be sure to set this HDD unit's jumper plug to "Slave".
- Except for the jumper plug shown here, do NOT use any other short plugs with the PL-HD220, since it can cause a malfunction or damage the unit.

<PL-HD220>



**When using the PL-HD220 as a Master, be sure to remove the jumper plug, as shown in the left side figure.**

### 3 Installation

Use the following steps to install the PL-HD220 in the PL. Even though the unit shown below is a PL-X900 Series unit, the PL-5900, PL-5910 and PL-X920 Series installation procedures are the same.

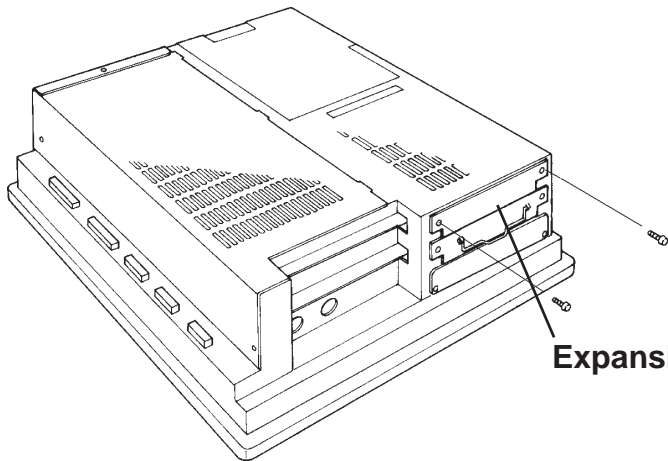


## WARNING

**Shock Danger!** Be sure to unplug the PL unit from its power supply prior to installing the PL-HD220.

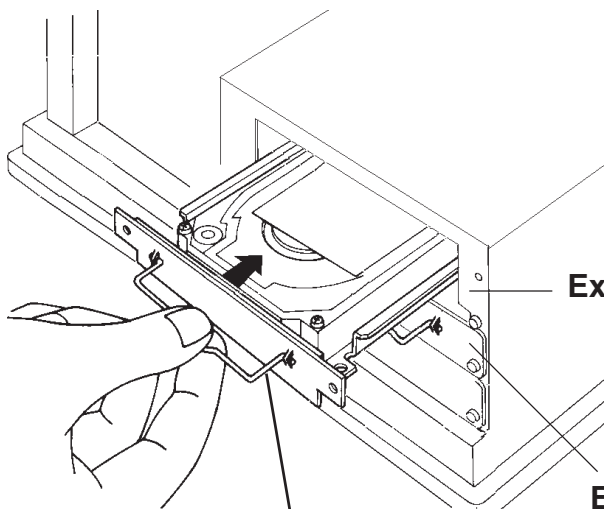
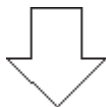


Since the PL-HD220 is a precision instrument that has a low resistance to shock, be sure it is neither hit by nor pressed strongly against another object when installing it.



- 1) Remove the uppermost (Expansion Slot 1) expansion slot cover's two (2) attachment screws.

Expansion Slot 1



- 2) Hold the PL-HD220's removal handle and slide the unit slowly into the expansion slot, until the rear face connector is completely inserted into the slot's connector pins.

Expansion Slot 1

- 3) Reattach the two (2) expansion slot cover attachment screws.

Expansion Slot 0

Removal Handle



**Note:** When installing an HDD unit in Expansion Slot 0, use the above installation procedures.

## 4 Hardware Setup



- **Normally, the factory default settings should be used.**
- **Certain BIOS screen items may differ from those shown here due to new versions.**



**Note:** All the following explanation screens use the PL's factory settings (default settings).

### When using a PL-X900 series unit:

- 1) Connect a keyboard to the PL.
- 2) Turn the PL unit's power ON.
- 3) When the "Press <DEL> to enter SETUP" message appears, press your PC's DEL key.

The Setup utility will start. Select the [STANDARD CMOS SETUP] and the following screen will appear.

ROM PCI/ISA BIOS(2A5LEU1C)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

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Date (mm:dd:yy): Wed,Jul 2 1998

Time (hh:mm:ss): 14 : 50 : 3

	CYLS.	HEADS	PRECOMP	LANDZONE	SECTORS	MODE
Drive C :Auto( 0Mb)	0	0	0	0	0	AUTO
Drive D :Auto( 0Mb)	0	0	0	0	0	AUTO

Drive A :1.44M,3.5 in.

Video : EGA/VGA	Base Memory : 640K
VGA_Text Mode: Normal	Extended Memory: 31744K
Halt On: All, But Keyboard	Other Memory: 384K
	Total Memory: 32768K

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ESC:Quit                    ↑↓→←: Select Item                    PU/PD/+/-: Modify  
F1:Help                    (Shift)F2: Change Color

#### Operation Keys

Displays the keys used (enabled) during Setup, and their function(s)

#### Help Information Display Area

Provides detailed information about the currently highlighted (cursor position) item

#### System Settings Area

Displays the current System Settings for each Menu area

- 4) Confirm that both the C and D drives are set to [Auto]. If [Auto] is not selected, be sure to change this setting to [Auto]. This designates that when the PL is started up, the hard disk's parameters are automatically read out and used. The [Auto] setting is factory set and recommended for most users.
- 5) Press the [ESC] key, select [SAVE & EXIT SETUP] and save the settings data.

**When using a PL-5900/PL-5910/PL-X920 series unit:**

Even though the BIOS screen shown below is for PL-5900 Series unit, the PL-5910 and PL-X920 Series setup procedures is the same.

- 1) Connect a keyboard to the PL.
- 2) Turn the PL unit's power ON.
- 3) When the Start-up Screen appears, press your PC's F2 key or DEL key to go to the BIOS Setup Screen.

In the Setup Screen, select the [STANDARD CMOS SETUP] screen, and from there, select either the IDE Primary Master or IDE Primary Slave menus. Next, the following screen will appear.

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software		Item Help
IDE Primary Master		
IDE HDD Auto-Detection	Press Enter	
IDE Primary Master	Auto	Menu Level ▶▶
Access Mode	Auto	To auto-detect the HDD's size, head...on this channel
Capacity	0 MB	
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	
↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults		

- 4) Confirm whether "AUTO" is selected in the Master and Slave screens. If AUTO is not selected, change these settings to AUTO. If AUTO is selected in both, disk parameters will be automatically read when the PL is turned ON. The factory setting is AUTO and recommended for most users. (When using together with HDD unit.)
- 5) After changing all settings, press the ESC key and select [Save & EXIT Setup] to save the settings.

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## **5 Software Setup**

After completing the hardware setup, in order to save data and application(s) to the HDD, use your OS (MS-DOS or Windows) to create partitions and format (initialize) the unit. Please consult your OS's operation manual for details about these procedures.

### **Note**

Please be aware that Digital Electronics Corporation shall not be held liable by the user for any damages, losses, or third party claims arising from the uses of this product.

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