BPC-6670

15” Industrial Panel PC
supports Pentium 4 CPU, OSD,
Function Keys & one PCI Slot

• 15” TFT Panel •
• BS-669 VGA to Panel Transfer Card •
• HPCI-2SP Backplane •
• 180W Power Supply •

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Safety Instructions

The safety recommendations outlined in this section are to be read, understood and followed before operating the product. Keep this information in a safe place for future reference. Failure to comply with any of the following safety procedures could result in serious hazard.

- Do not operate product for any purposes other than its intended use.
- This product is intended for indoor use only.
- Do not operate product if power cord is damaged in anyway.
- Do not insert objects into openings.
- Do not immerse product in water or permit liquids to spill inside.
- Turn off power when unattended or not in use. Unplug product before moving it or when it is not in use for an extended period of time. The socket-outlet should be installed near the equipment and should be easily accessible.
- Do not alter or extend electric plug. Plug is configured for appropriate electrical supply.
- Do not overload electrical outlets beyond their capacity as this can result in a fire.

Life Expectancy of Constituent Parts

This section describes the life expectancy of constituent parts (backlight, power supply, internal cooling fan and touch screen) of which the BPC-6670 is made up .

- **TFT Display Backlight**

Display brightness decreases over time with use. The expected operating lifetime of the backlight time to reach 50% initial brightness is 30,000 hours (assuming continuous lit state at 25 degrees C). Actual lifetime before replacement is about 30,000 hours, although this depends on operating conditions.

- **Power Supply**

The power supply has a minimum predicted MTBF of 100,000 hours of continuous operation at 25 degrees C, maximum-output load, and nominal AC input voltage.

- **Internal Cooling Fan**

The BPC-6670 is equipped with two built-in +12V cooling fans, the life expectancy of this fan under continuous use is approximately 50,000 hours (average time before the rate of rotation is reduced by approximately 30%). Although the rate of rotation will continue to go down, the fan should not just suddenly stop.

- **Touch Screen**

The operating lifetime of the touch screen is approximately 1 million operations (as tested by mechanical manipulation under 100g of force at a rate of two presses per second).

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Chapter 1

Introduction



The BPC-6670 is a 15” industrial Panel PC built around the Intel® Pentium® 4 CPU with clock rate 2.4GHz/2.8GHz and 400MHz FSB/533MHz FSB. The rear design of BPC-6670 enhances the disassembly process when required. It also supports various mounting solutions like wallmount, or desktop for different applications.

The BPC-6670 has a 15” display and an optional touch screen that operate under all types of working environments. It offers OSD (On Screen Display) and Function Keys (optional) on the front panel for user’s operation.

The BPC-6670 supports Pentium® 4 industrial PICMG Bus SBC. It also comes with a reliable power supply and two 4cm high efficient cooling fans to enhance system stability.

The Intel® 82540EM Gigabit Ethernet Controller architecture is optimized to deliver both high performance and PCI Bus efficiency with the lowest power and smallest die size. Using state logic design with a pipelined DMA Unit and 128-bit wide buses for the fastest performance, the Intel® 82540EM controller handles Gigabit Ethernet traffic with low network latency and minimal internal processing overhead.

The combination 82562 device with ICH2/3/4 LAN solution is a 32-bit PCI device that features enhanced scatter-gather bus mastering capabilities which allow the LAN solution to perform high-speed data transfers over the PCI Bus. The Bus mastering capabilities enable the LAN solution to process high-level commands and perform operations, thereby offloading communications tasks from the system CPU.

Other features included in this 15-inch TFT panel are the BS-669 VGA to Panel transfer card supporting OSD function, Function Keys (optional), a 15-inch resistive touch screen (optional), one PCI expansion slot, two DDR sockets supporting up to 2GB (optional), two serial ports, one parallel port, one USB connector, Award PnP Flash BIOS, and more.

- The BPC-6670 is compatible and can draw from a large body of hardware and software resources worldwide.
- 180W power supply with NEMKO, IEC, UL, CE, CSA, TUV approvals
- User can select the operating system he wants to use just like an ordinary personal computer. An operating system such an MS-DOS, Windows can be selected to suit the application.
- Keyboard-less operations are possible through the use of a touch screen. In addition to a watchdog timer indispensable in FA applications, you can select from a broad range of variations to arrive at the optimum configuration for your application and budget.

1.1 Major Features

The BPC-6670 comes with the following features:

- Aluminum chassis
- 15” high brightness TFT color panel display
- Provides Pentium® 4 CPU, OSD function
- Provides HS-7001 PICMG Bus SBC, Function Keys (optional)
- Built-in BS-669, HPCI-2SP backplane, 180W power supply
- Intel 82845G display controller
- Intel 82540EM (or Intel 82551) and Intel 82562 LAN controller
- Two COM, one parallel, one USB connector
- One PCI expansion slot
- One 2.5”/3.5” HDD, one 3.5” FDD and one slim CD-ROM spaces
- Two 4cm ball bearing cooling fans
- Supports 15” Touch Screen (optional)

1.2 Specifications

- **System Board:** HS-7001 industrial PICMG Bus SBC (optional)
- **CPU:** PGA 478 for Intel® Pentium® 4 up to 2.4GHz (400MHz FSB)/ 2.8GHz (533MHz FSB) CPU
- **Memory:** Two DDR sockets supporting up to 2GB (optional)
- **Backplane:** HPCI-2SP backplane
- **PCI Slot:** One PCI expansion slot
- **OSD:** BS-669 VGA to Panel transfer card, supporting OSD function
- **Function Keys:** Provides Function Keys in the front panel (optional)
- **Touch Screen:** 15" resistive Touch Screen (optional)
- **VGA:** Intel® 82845G with 1MB or 8MB memory supporting up to 1280 x 1024 at 32-bit colors
- **LAN:** Intel® 82540EM 100/1000 Based (or Intel® 82551 10/100 Based) and Intel® 82562 10/100 Based LAN
- **HDD/FDD/CD-ROM:** One 2.5"/3.5" HDD, one 3.5" FDD and one slim CD-ROM spaces
- **Serial Port:** Two serial ports
- **Parallel:** One enhanced bi-directional parallel port supporting SPP/ECP/EPP
- **USB:** One USB connector
- **Keyboard/Mouse:** PS/2 6-pin Mini DIN
- **BIOS:** Award PnP Flash BIOS
- **Watchdog Timer:** Software programmable time-out intervals from 1~256 sec.
- **Fan:** Two 4cm ball bearing cooling fans
- **Power Supply:** 180W power supply
- **Temperature:** 0~50°C (operating); -20~+60°C (storage)
- **Dimensions:** 43.0 x 32.1 x 9.32 cm

1.3 Panel Specifications

- **Screen Size:** 15 inches
- **Display Format:** 1024 x 768 pixels
- **Pixel Pitch:** 0.3075(H) x 0.3075(V) m/m
- **Color:** 262K
- **Brightness:** 250 cd/m^2
- **Contrast Ratio:** 200:1
- **MTBF:** 30,000 hrs.

1.4 Power Supply Specifications

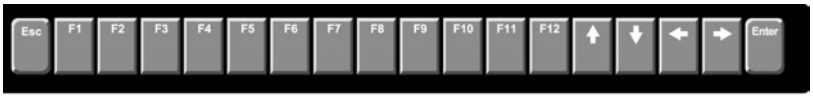
- **Input Voltage:** 100~240VAC full range
- **Input Frequency:** 47~63Hz
- **Input Current:** 4A max. 115Vrms at 60Hz; 2A max. 230Vrms at 50Hz
- **Inrush Current:** 50A cold, 80A ware at 132VAC
- **Hold Up Time:** 17ms min. at full load & nominal input voltage
- **Output Power:** +3.3V and +5V total output should not exceed 61W
- **Power Good Signal:** Turn on delay 100~500ms
- **Thermal System:** One 4cm ball bearing cooling fan
- **Dimensions:** 15.0 x 8.15 x 4.05 cm

1.5 Control Keys

BPC-6171 provides Function Keys and OSD Control Keys.



- **Function Keys Define (optional)**

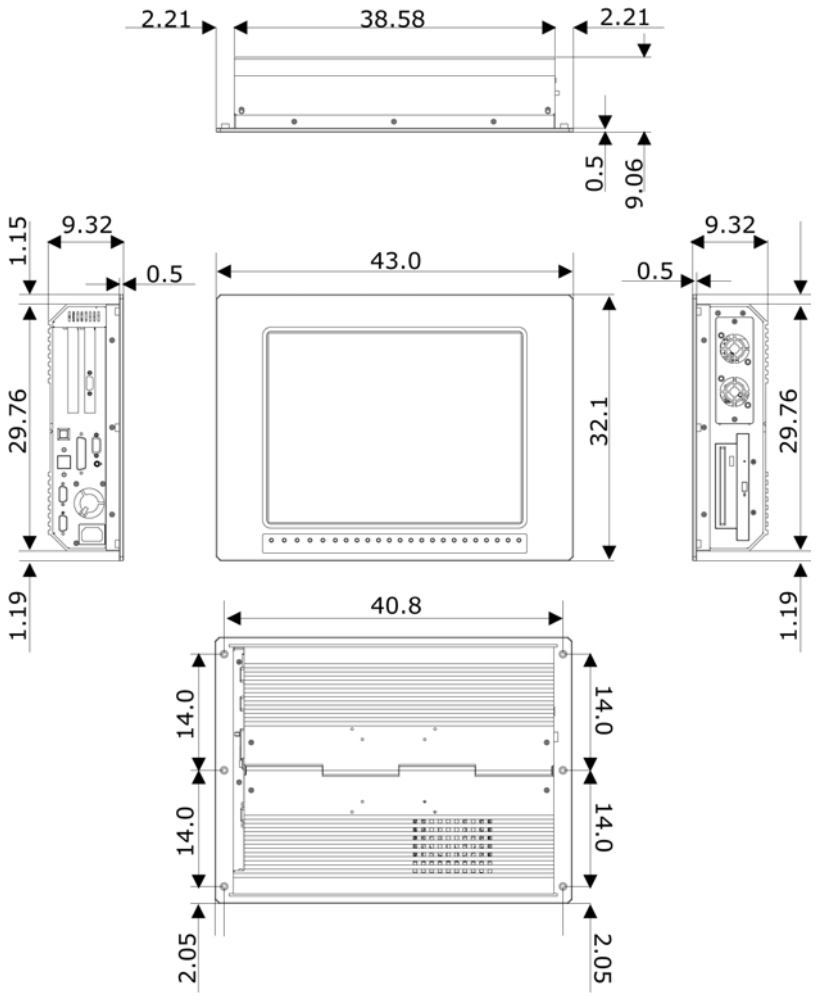


- **OSD Control Keys Define (optional)**



- Menu: Menu/Item select
- Down: Cursor down control
- Up: Cursor up control
- Return: Return to menu

1.6 Dimensions



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Chapter 2

Unpacking

2.1 Opening the Delivery Package

The BPC-6670 is packed in an anti-static bag. The board has components that are easily damaged by static electricity. Do not remove the anti-static wrapping until proper precautions have been taken. Safety Instructions in front of this manual describe anti-static precautions and procedures.

2.2 Inspection

After unpacking the Panel PC, place it on a raised surface and carefully inspect the board for any damage that might have occurred during shipment. Ground the board and exercise extreme care to prevent damage to the board from static electricity.

Integrated circuits will sometimes come out of their sockets during shipment. Examine all integrated circuits, particularly the BIOS, processor, memory modules, ROM-Disk, and keyboard controller chip to ensure that they are firmly seated. The BPC-6670 delivery package contains the following items:

- **BPC-6670 Panel PC x 1**
- **Power Cable x 1**
- **Touch Screen Drive Diskette x 1 (optional)**
- **Drive CD Disk x 1**
- **SBC Manual x 1**
- **User's Manual x 1**

It is recommended that you keep all the parts of the delivery package intact and store them in a safe/dry place for any unforeseen event requiring the return shipment of the product. In case you discover any missing and/or damaged items from the list of items, please contact your dealer immediately.

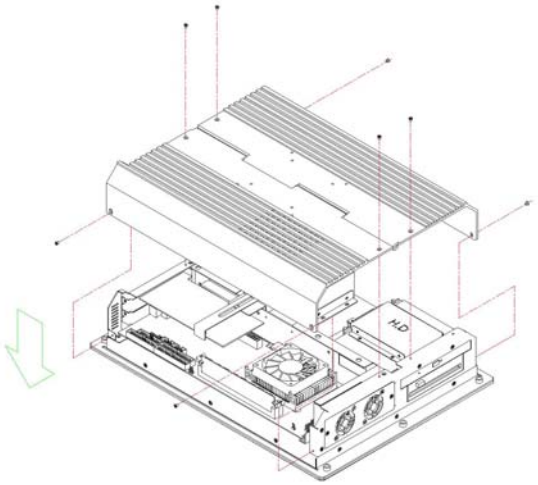
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Chapter 3

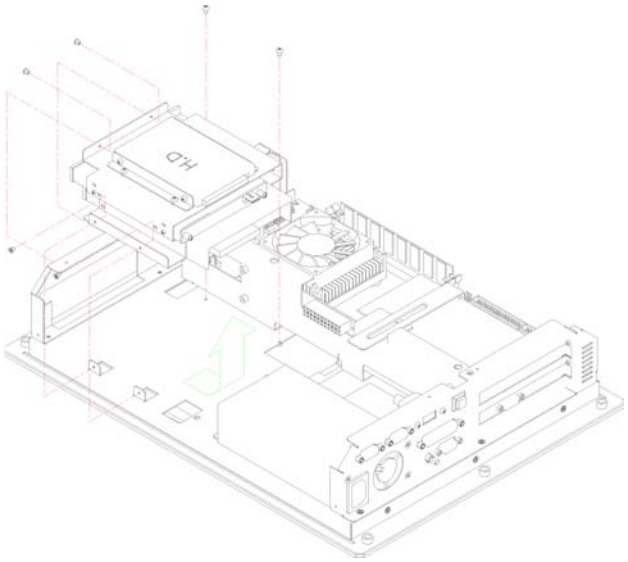
Hardware Installation

This chapter tells how to install components into the Panel PC system. For the external interface, please refer to SBC's manual.

1. Dismount the rear cover by loosening the screws in accordance with the picture.

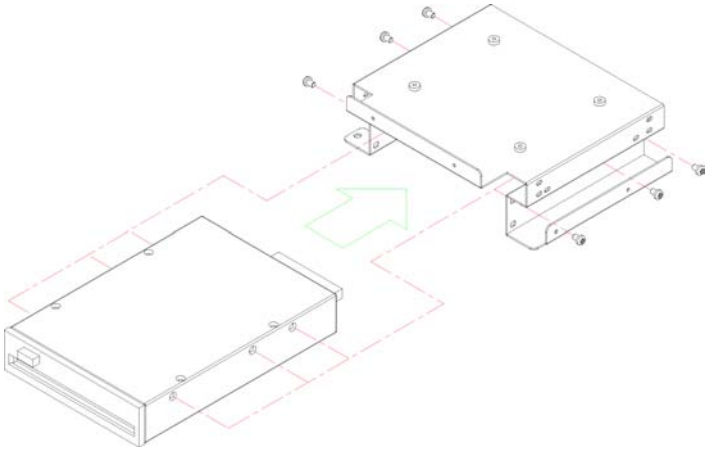


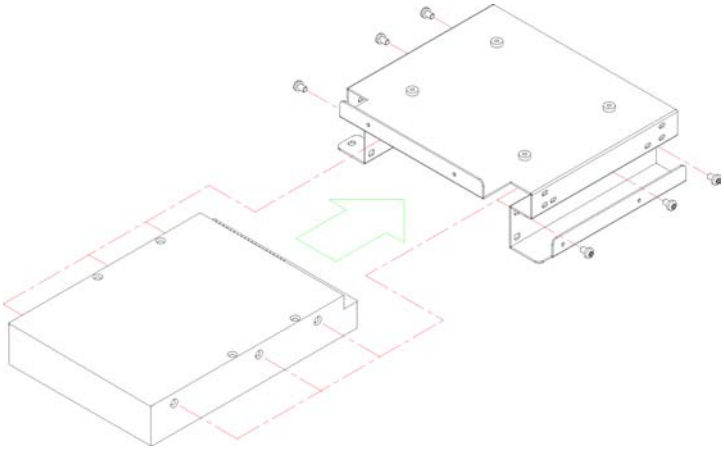
2. Remove the 3-in-1 drive bay in accordance with the picture.



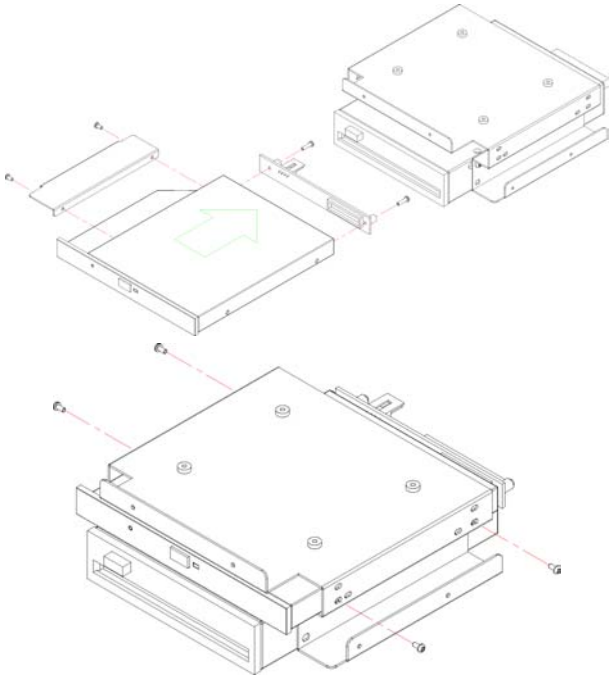
3. The 3.5-inch FDD (or the 3.5-inch HDD) is installed on top of the 3-in-1 drive bay.

NOTE: *Only one of the two choices can be used.*

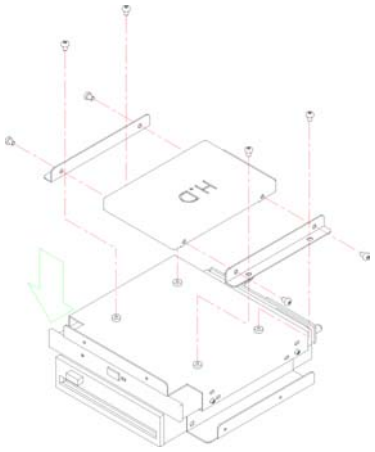




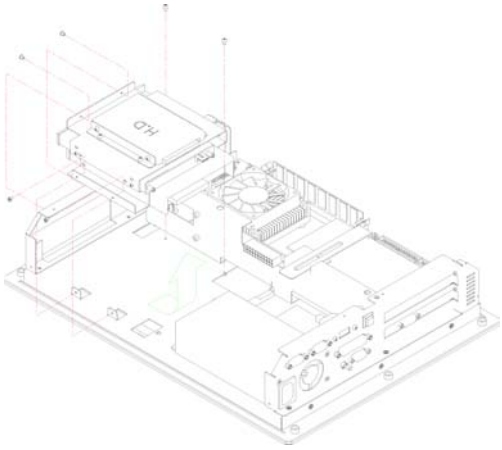
4. Secure the CD-ROM on the 3-in-1 drive bay after fastening it onto a transfer card.



5. Fasten the 2.5-inch HDD onto the 3-in-1 drive bay.



6. The fully-equipped, 3-in-1 drive bay is placed on the BPC-6670 by means of screw.



7. Finally, screw back the rear cover.

Chapter 4

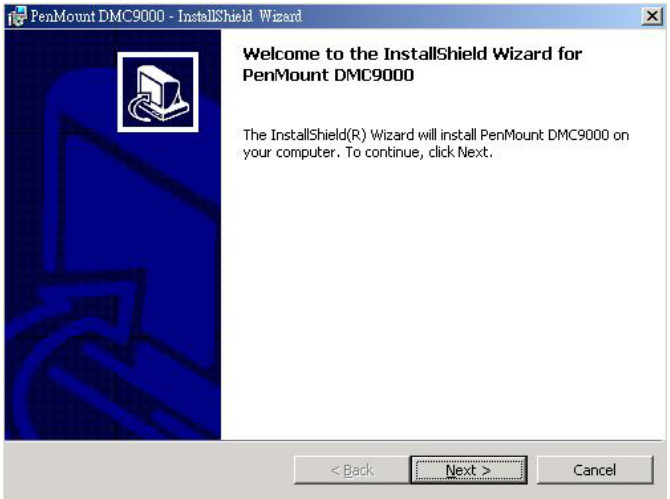
Touch Screen Driver Installation

This chapter contains the detailed information of Touch Screen driver installation procedures. The utility disk that come with the delivery package contains an auto-run program that invokes the installation programs for the Touch Screen driver. The following sections describe the installation procedures of driver based on Win 2000 operating systems. It is recommended that you install the drivers matching the sections listed in this chapter.

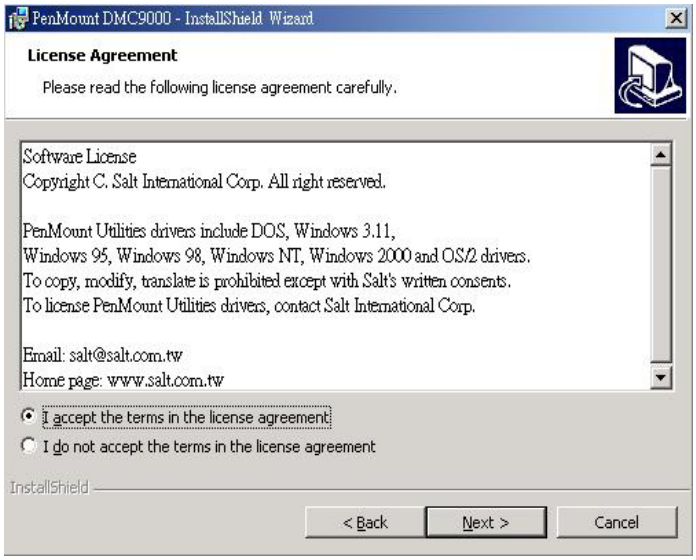
4.1 Touch Screen Driver Installation

4.1.1 Installing Touch Screen Driver in Win 95 and 98

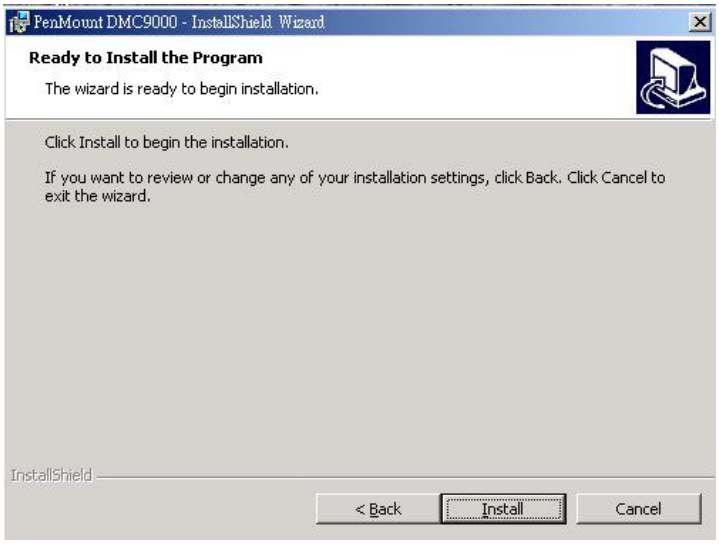
1. Insert Utility CD Disk into your CD ROM drive. The main menu will pop up as shown below.
2. The screen displays copying "installation wizard" and "PenMount Utilities Installation" screen plus "welcome" message appear, click "Next".



3. The next screen is “Software License Agreement”, select “I accept” and click “Next”.



4. The next screen is “Ready to Install the Program”, click “Install”.

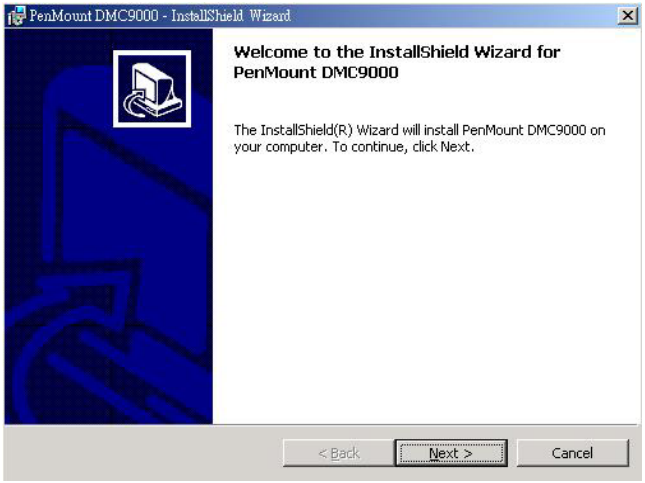


5. Once the Install Shield Wizard finishes updating your system, it will prompt you to restart the computer. Click "Finish" to exit the wizard.

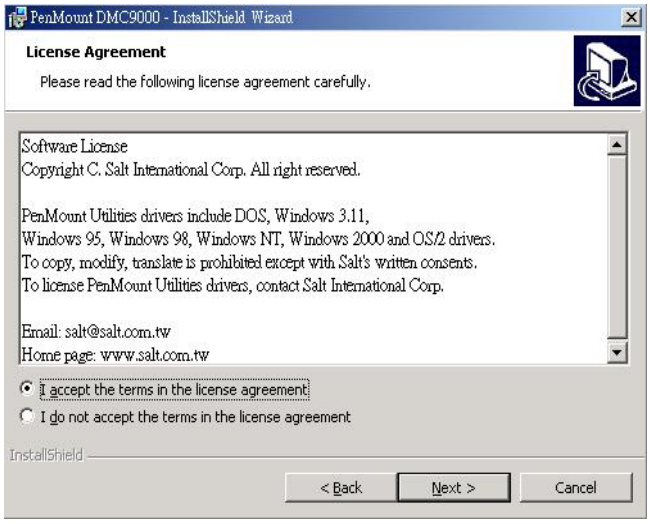


4.1.2 Installing Touch Screen Driver in Win 2000

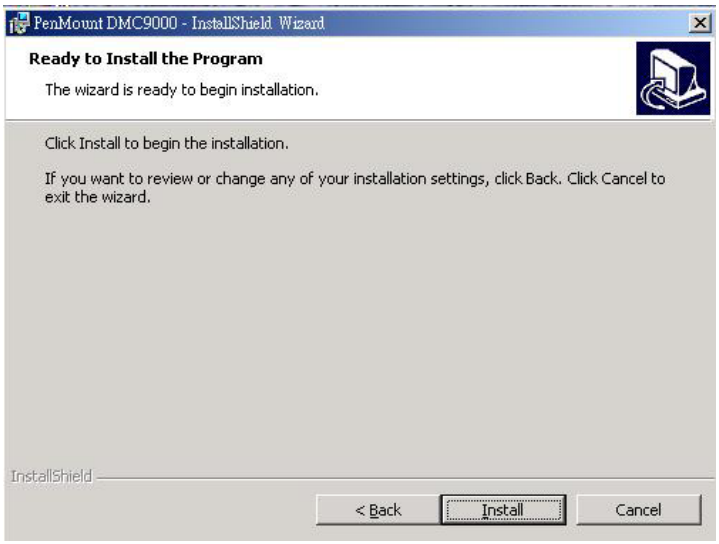
1. Insert Utility CD Disk into your CD ROM drive. The main menu will pop up as shown below.
2. The screen displays copying "installation wizard" and "PenMount Utilities Installation" screen plus "welcome" message appear, click "Next".



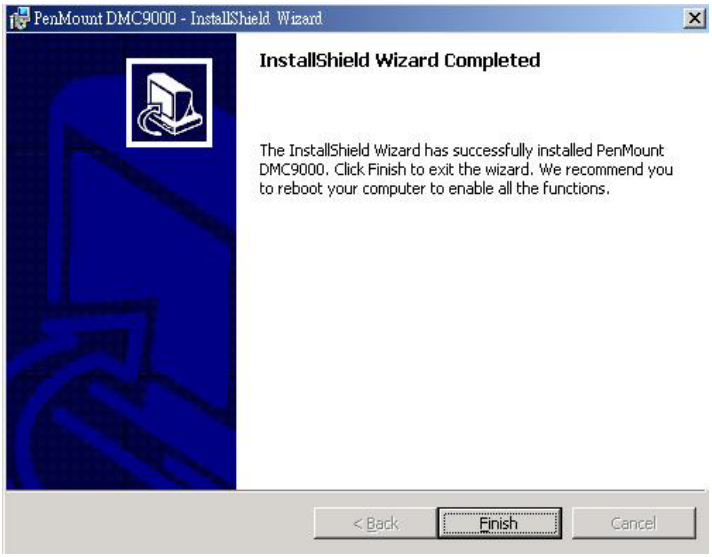
3. The next screen is "Software License Agreement", select "I accept" and click "Next".



4. The next screen is "Ready to Install the Program", click "Install".



5. Once the Install Shield Wizard finishes updating your system, it will prompt you to restart the computer. Click "Finish" to exit the wizard.

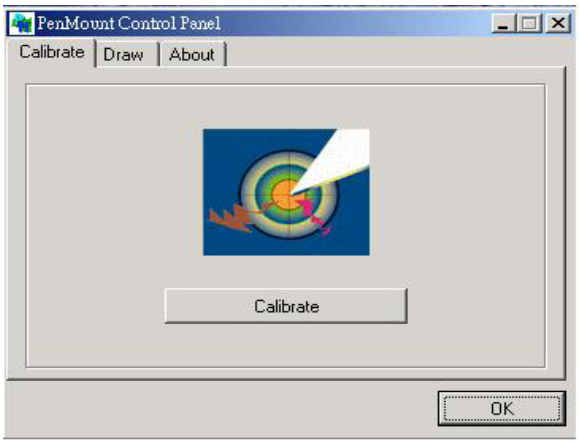


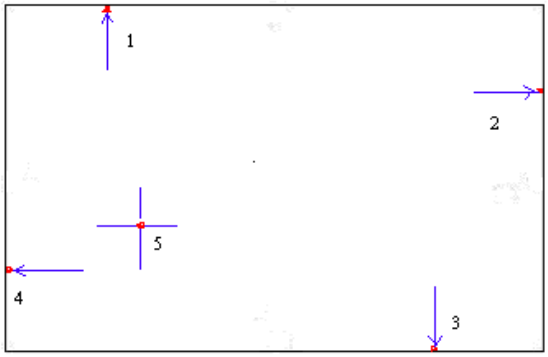
4.2 Driver Functions

4.2.1 PenMount Control Panel

- **Calibration**

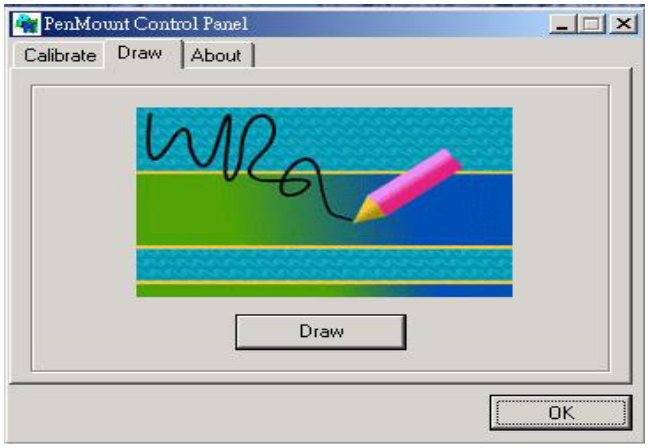
  To adjust the display with touch screen, click “Calibration” and follow the calibrate point to do calibration, there are five points on screen for calibration.





- **Draw**

  Test or demonstrate PenMount touch screen operation. Also the touch location is shown on the display. Click on touch “DRAW” to start.



- **About Penmount**

  It shows information about PenMount controller and this driver.

4.2.2 PenMount Monitor

The PenMount monitor icon is shown in the menu bar of Windows 2000 system when the PenMount monitor is turned on under the PenMount Utilities.



There are several functions on the PenMount monitor:

- **Right Click Button**
  When selecting this function, there is a mouse icon shown in the right-button place of screen. It shows 'left button' being as default for normal use. Touch this mouse icon to change the next touch to be 'Right Button' function. After one touch, the mouse icon will change to 'Left Button' automatically. If user needs to use right button again, user has to touch the mouse icon again for changing the button function.

- **Beep**
  Turn on or off beep sound.

- **Exit**
  Close the PenMount Monitor function.