



MICROBOARDS[®]
Technology



PF-Pro Disc Printer

For Mac OS X

Users Manual

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Any unauthorized modification to this equipment may result in the revocation by the FCC of the user's authority to operate this equipment.

NOTE: 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 harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and antenna
- Connect the equipment into an outlet on a circuit different than that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help



This product is in conformity with the EMC Directive (89/336/EEC) through compliance with the following European standards: EN 55022, EN 55024. The CE mark has been affixed in accordance with the CE Marking Directive 93/68/EEC.

Canadian Department of Communications (DOC) Statement

This Class B digital apparatus complies with the Canadian ICES-003 Issue 4:2004. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Introduction

The PF-Pro Disc Printer is a robust automated inkjet CD and DVD printing solution. The PF-Pro Disc Printer has a 100-disc capacity, making the task of printing large numbers of discs fast, easy and hands-free.

Fully Integrated Automation

Microboards combined their patented auto-loading system with HP's new inkjet printer engine to give users the highest output possible, both in image resolution and print speed. Since the PF-Pro Disc Printer is an autoloading printer, no calibration of robotics or manual feeding of discs is required. The PF-Pro Disc Printer connects by a single USB 2.0 interface to your computer.

Flexibility and Speed for Any Application

While the PF-Pro Disc Printer was designed to fill a need in the high-volume arena, it also has the ability to print at 4800 x 1200 dpi on both DVD and CD media. The PF-Pro Disc Printer can be used from any application, although it is recommended that any artwork you create is 12cm by 12cm in size.

What's Included

When unpacking your PF-Pro Disc Printer system, the following items should be included:

- PF-Pro Disc Printer print system
- PF-Pro Disc Printer Quick Start Guide
- Unpack Guide
- Users Manual (This document)
- Power Cord
- USB 2.0 Printer Cable
- Blank Printable CD's
- Input Bin rods
- 100 disc output assembly
- Microboards PF-Pro Disc Printer Install CD
- 1 each: Microboards PFP-HC-CYAN, PFP-HC-MAGENTA, PFP-HC-YELLOW, and PFP-HC-BLACK Ink cartridges
- 1 each: CG316A (Yellow and Black) and C9382A (Cyan and Magenta) printheads

If any of these items are missing, please contact your distributor or Microboards Technology Technical Support department at 952-556-1639.

The PF-Pro Disc Printer installation disc includes an Installer that will walk you through the process step by step. Please perform the installation in order as specified in the Installer before connecting to a computer.

System Requirements

The Microboards PF-Pro Disc Printer has the following minimum requirements and compatibilities:

Operating System

Mac OS 10.4 to 10.6.

Processors

G 4 Power PC Processor, running at 1.2 GHz or faster; -or- Intel Processor

System Memory

Minimum 512 MB of system memory required; 1 GB minimum recommended.

Hard Drive Space

Less than 30MB of free space is required on the system hard drive for the applications and drivers.

USB Connection

USB 2.0 is required.

Assembly and Installation

Assembly Instructions

PF-Pro Disc Printer Assembly

Remove the PF-Pro Disc Printer system from the shipping box and confirm you received all of the items.

Place the PF-Pro Disc Printer on a stable, flat surface. You will need room both in front and behind the system, as discs will be accessed from both locations.

Install the 2 long input bin posts above the input hopper, with the wide post to the right (shipped installed).

Install the output bin:

- Align the two holes in the output bin with the holes on the Front of the printer (numbers 1 and 2).
- Secure the output bin with the two thumb screws.
- The output bin should now be securely in place.
- Next, slide in the 100 disc output spindle into place.

The Output Bin is designed to hang over the front edge of your work surface.



Installing Ink Cartridges and Print Heads

Supported Ink Cartridges

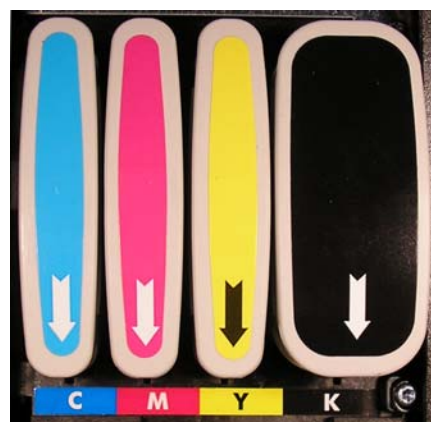
The PF-Pro Disc Printer uses 3 color and 1 black ink cartridges. The part numbers for these cartridges are PFP-HC-CYAN, PFP-HC-MAGENTA, PFP-HC-YELLOW, and PFP-HC-BLACK. If other cartridges are installed, the PF-Pro Disc Printer will not function. These cartridges are available from any Microboards reseller.

Refill kits or non-Microboards ink cartridges are not recommended for use in the PF-Pro Disc Printer system. Use of non-Microboards cartridges will cause the printer to fail. Use of refilled cartridges may cause the PF-Pro Disc Printer to fail.

Loading / Replacing Ink Cartridges

Cartridges can be changed while the PF-Pro Disc Printer is on, but it should never be turned on without an ink cartridge in place. An LED will light above any cartridge that is below 25% capacity.

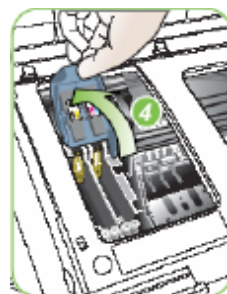
- Lower the ink door.
- If replacing an empty ink cartridge, remove the color that needs changing by pulling straight out.
- Remove each new print cartridge to be installed from its packaging.
- Slide the correct ink cartridge into the correct slot with the arrows pointing down, as shown to the right.
- Raise the ink door and latch it back into place. The printer will be ready after the ink cartridges pressurize and the Media Feed button LED goes out.



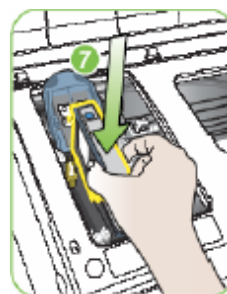
Installing / Replacing Printheads

The 2 Printheads are not installed when you receive the PF-Pro Disc Printer, and must be installed prior to using the printer. The printhead models are CG316A (yellow and black) and C9382A (cyan and magenta).

1. Raise the top Printhead Access Door.
2. If you are setting up the PF-Pro Disc Printer for the first time, remove any packaging materials from around the printhead carriage.
3. If you are replacing printheads and the printhead carriage is not parked all the way to the left, turn on the PF-Pro Disc Printer. With the Printhead Access Door opened, press and hold the Media Feed button until the carriage moves to the left and locks into position.
4. Lift the cradle latch. If you are replacing the currently installed printheads, remove the printheads by lifting the blue handle of each and gently pulling up on each handle.
5. Remove the printheads from the packaging.
6. Gently shake each printhead 6 times prior to removing the orange protective caps. Save the caps! If you remove the printheads from the PF-Pro Disc Printer, they should be recapped to avoid clogging the printheads and ink valves.
7. Gently press the printheads into the cradle, installing the correct printhead in the correct slot. **DO NOT FORCE THE PRINTHEADS INTO PLACE.**
8. Lower the cradle latch carefully.
9. Lower the top Printhead door. The printhead carriage will return to the right and will be primed by the printer if the power is on.



Step 4



Step 7

Loading Discs

The next step is to load your PF-Pro Disc Printer with output discs. The system will accept CD or DVD 120 mm (12 cm) inkjet printable discs. If the disc does not have an inkjet printable surface, the ink will not adhere to the surface of the disc. The PF-Pro Disc Printer will only accept 12 cm discs. Business card or 8 cm discs are not supported by this system.



Figure 1

Load the first 5 or 6 discs flat, as seen in figure 1.

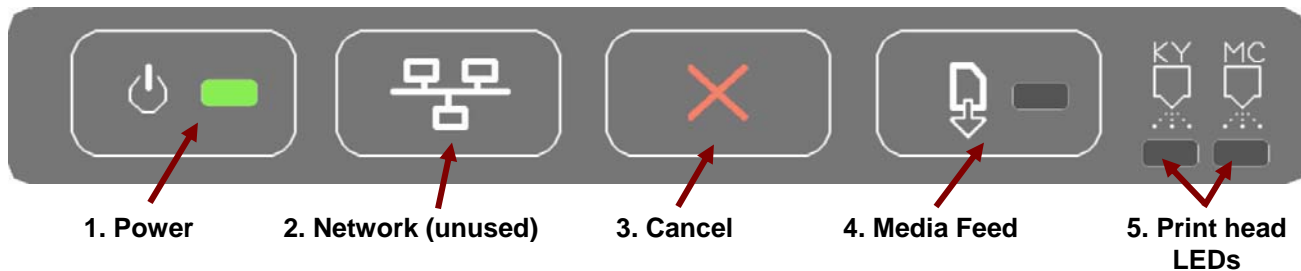


Figure 2

Load the rest of the discs at an angle, against the wide input rod, as seen in figure 2.

The PF-Pro Disc Printer will hold a maximum of 100 discs. DO NOT load more than 100 discs in the system, as this may cause the discs to feed incorrectly.

Front Panel Indicators and Buttons



1. Power Button and LED – The Power button turns the PF-Pro Disc Printer on and off. It may take a few seconds for the PF-Pro Disc Printer to turn on after you press the Power button. The green LED on the Power button flashes when the printer is processing.

NOTE: The AC power switch located on the back of the PF-Pro Disc Printer must be turned on first in order to supply power to the Front Panel.

2. Network Button - This button is unused.
3. Cancel Button – Pressing the Cancel button cancels the current print job.
4. Media Feed Button – Pressing this button will clear any media feed issues. This button has an LED that will flash amber when a media feed issue is occurring. It will also show a steady amber if either the ink or the upper doors are opened.
5. Print Head LEDs – These LEDs will be on if there is an issue with either of the print heads.

Installation of Drivers and Software

Driver Installation

Drivers must be installed on a hard disc. Once you have installed the software, store the original installer disc in a safe place.

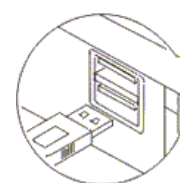
1. Insert the Installation CD in your system's disc drive. Open the disc icon when it appears on the desktop.
2. Double-click on the **Microboards Disc Printer.mpkg** icon. Follow the on-screen instructions, read and agree to the end user license agreement.
3. When prompted, enter your administrator password.
4. When prompted, click **Install**.
5. Once the installation has completed, click **Restart**.

Connecting to a Mac

DO NOT CONNECT YOUR PF-PRO DISC PRINTER BEFORE RUNNING THE INSTALLER LOCATED ON THE INSTALLATION DISC!!

The connection between the Mac and the Microboards PF-Pro Disc Printer is done with one USB 2.0 cable.

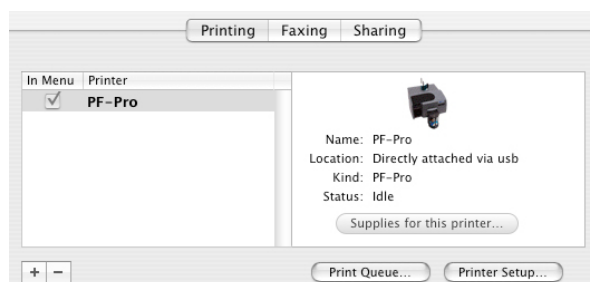
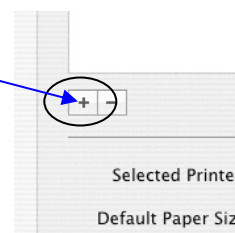
1. Install all 4 Ink Cartridges (see page 7).
2. Install both Printheads (see page 7).
3. Plug in the AC power cord to the back of the PF-Pro Disc Printer. ***Do not turn on power to the PF-Pro Disc Printer until an ink cartridge has been installed.***
4. Connect the square shaped end of the USB cable to the back of the PF-Pro Disc Printer.
5. Connect the flat, rectangular end of the USB cable into a USB 2.0 port in your Mac.
6. Turn on the PF-Pro Disc Printer.



Adding the PF-Pro Disc Printer

Once the drivers and software have been installed and the PF-Pro Disc Printer connected, the PF-Pro Series Printer needs to be added.

1. Click **System Preferences** in the Dock.
2. Select **Print & Fax**, then click the **Add** or **+** button to add a printer.
3. Select **PF-Pro** from the list and click the **Add** button.
4. Once the PF-Pro Disc Printer Series Printer has been added, it will appear in the available printers list, as shown below.

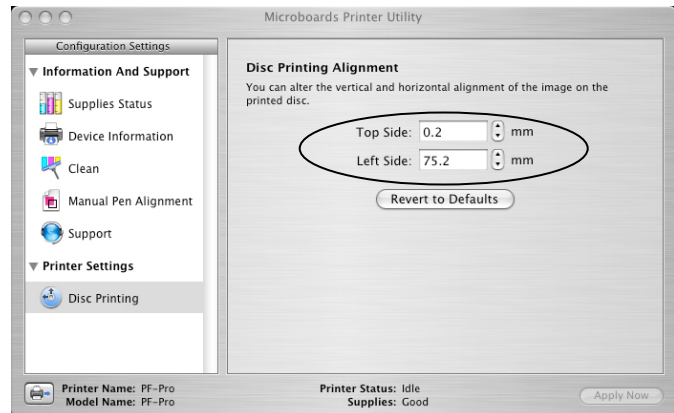


Setting Printer Alignment

Alignment

The PF-Pro Disc Printer system has been aligned at the factory, but may need to be adjusted depending on the type of media and media print surface on which you are printing. Follow these steps to adjust the alignment:

- Click **System Preferences** in the Dock.
- Select **Print & Fax**.
- Click the **Set Up Printers...** button.
- Highlight the Microboards PF-Pro icon.
- Click the **Utility** button to open the Microboards Printer Utility.
- Select **Disc Printing** from the list.
- Enter the values listed with the PF-Pro Disc Printer into the **Top Side** and **Left Side** boxes.
- Click the **Apply Now** button.
- Test the alignment by printing a full-coverage image (120 mm by 120 mm) onto an unprinted disc. The image should print centered on the disc. If not, adjust the **Top Side** and **Left Side** as necessary, verifying the alignment by printing the same image.



Microboards Printer Utility

Access the Microboards Printer Utility by selecting the **System Preferences** from the Dock. Select **Print & Fax**. Highlight the Microboards PF-Pro icon and click the **Utility** icon. The Microboards Printer Utility pages will appear in the following order.

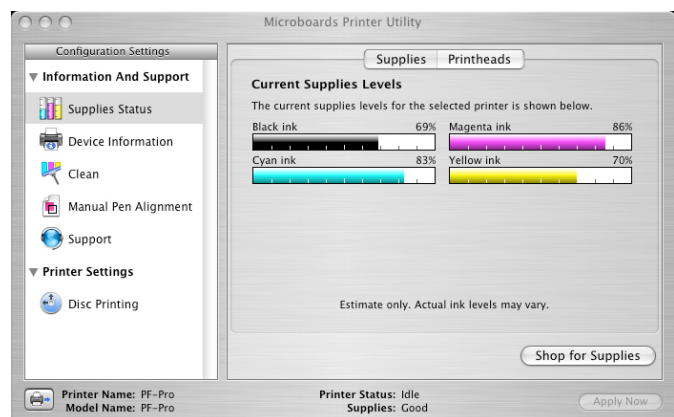


Supplies Status

The **Supplies Status** show how much remains of all 4 colors, Cyan, Magenta, Yellow, and Black. The values shown will be refreshed when you go to another setting page and then back to the **Supplies Status** page.

In addition to the displayed levels in the Printer Utility, an LED indicator on the front of the PF-Pro above each cartridge will light when the ink level is at 25% in that cartridge. The LED will blink when the ink level is at 0%.

It is strongly recommended that you replace any cartridge that shows 0%.



Device Information

This page shows the Firmware version and Serial Number of the PF-Pro Disc Printer.

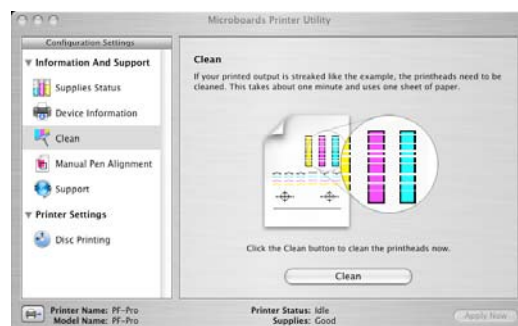
Clicking the Print Configuration Page button will print out a test disc.



Clean

The Clean page allows you to run a cleaning cycle on the ink cartridge.

Click the **Clean** button once a disc has been loaded into the input hopper. If the resulting disc shows streaks similar to those shown in the image on this page, you may need to run the Clean utility again.



Printhead Maintenance

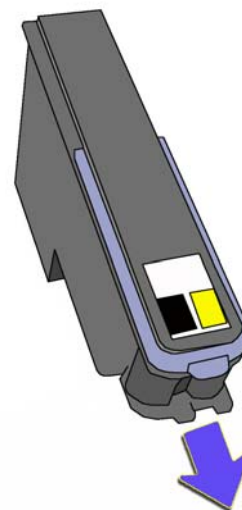
If, after several cleaning attempts, the printed images continue to show streaks of color, you may need to manually clean the printheads. Follow the procedure below exactly to clean the printheads. Not following these steps could result in damaged printheads.

1. Remove the printheads from the carriage (please see **Installing/Replacing Printheads**, page 7).
2. Use ionized water to lightly dampen a lint-free cloth
3. Place the cloth on a level surface
4. Holding the printhead with the bottom of the printhead resting lightly on the cloth, gently pull the printhead towards you along the direction of the long axis of the printhead, as shown to the right.

DO NOT MOVE THE PRINTHEAD FROM SIDE-TO-SIDE, AS THIS COULD MIX THE INK COLORS IN THE PRINTHEAD!

5. If the printhead does not leave two solid lines of color, one for each color in the printhead, move the printhead to a clean area on the cloth and repeat step 4.
6. Carefully replace the printhead in the PF-Pro Disc Printer once the heads have been cleaned.

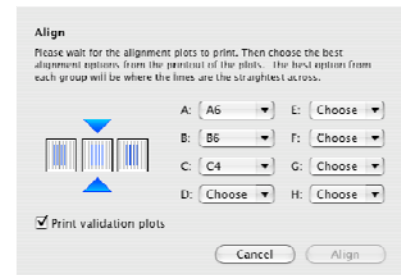
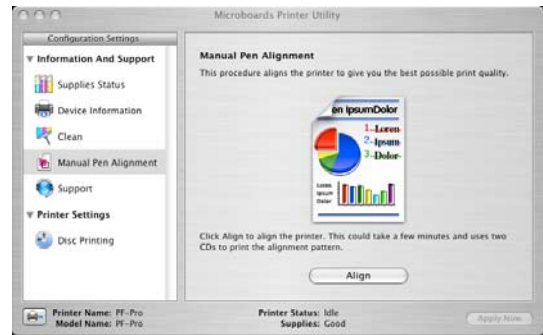
If you do not follow the above procedure exactly, you could damage your printheads!



Manual Pen Alignment

Pen Alignment should be performed when a new printhead is installed. If you experience a decrease in print quality with an installed printhead, you may need to perform this service.

- Load 4 pieces of blank, unprinted media into the input hopper.
- Click the **Align** button, and 2 discs will load to the belts and be printed.
- Select the Alignment Speed. **20ips** is the recommended setting.
- Use these discs to select the patterns that are best aligned in the next window, as shown to the right. All 8 entries must be made. In the example shown, the first 3 selections have been made.
- After selecting the patterns with the best alignment, click **Align**.
- The pen alignment discs will print again. The best aligned patterns should have moved closer to the center (they do not need to be in the center, only closer to the center than the original set of discs). If so, click **Cancel**. If not, enter the values from the second set of discs and click **OK**; you will need to load 2 more blank discs.



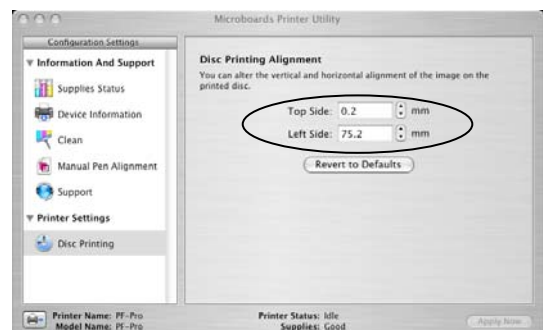
Support

Clicking the **Support** button will open the Microboards Technology Support website in your default internet browser. This function requires an internet connection.

Disc Printing

The PF-Pro Disc Printer system has been aligned at the factory, but may need to be adjusted depending on the type of media and media print surface on which you are printing. Follow these steps to adjust the alignment:

- Click **System Preferences** in the Dock.
- Select **Print & Fax**.
- Click the **Set Up Printers...** button.
- Highlight the Microboards PF-Pro icon.
- Click the **Utility** button to open the Microboards Printer Utility.
- Select **Disc Printing** from the list.
- Enter the values listed with the PF-Pro Disc Printer into the **Top Side** and **Left Side** boxes.
- Click the **Apply Now** button.
- Test the alignment by printing a full-coverage image (120 mm by 120 mm) onto an unprinted disc. The image should print centered on the disc. If not, adjust the **Top Side** and **Left Side** as necessary, verifying the alignment by printing the same image.



Using the PF-Pro Disc Printer

Creating Disc Labels

The first step is to create a disc label of the correct size, 12cm x 12cm. You may use any application you prefer to create your labels.

Included on the Installation disc are 2 eps-format templates for you to use. These are essentially blank files of the correct size that show where the outer edge of the disc and the inner hub will be the image when your disc label designs are printed. One is for use with non-hub printable media (36mm hub), while the other is to be used with hub printable media. Simply copy your artwork into these files to create an easy disc label.

These files do not need to be used, but are provided for an easy reference when creating labels.

Loading Discs

The next step is to load your PF-Pro Disc Printer with output discs. The system will accept CD or DVD 120 mm (12 cm) inkjet printable discs. If the disc does not have an inkjet printable surface, the ink will not adhere to the surface of the disc. The PF-Pro Disc Printer will only accept 12 cm discs. Business card or 8 cm discs are not supported by this system.

Load the first 5 or 6 discs flat, as seen in the top image to the right.

Load the rest of the discs at an angle, against the wide input rod, as seen in the bottom image to the right.

The PF-Pro Disc Printer will hold a maximum of 100 discs. DO NOT load more than 100 discs in the system, as this may cause the discs to feed incorrectly.



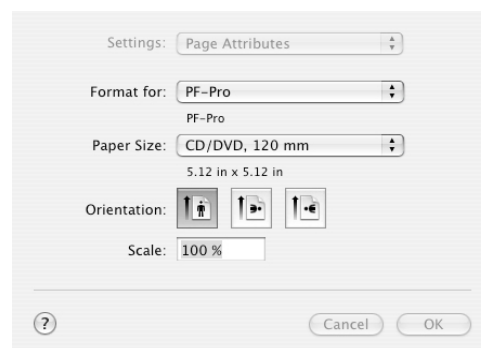
Printing Discs

Printing prior to burning any media is not recommended!!

Page Setup

While the Microboards PF-Pro Disc Printer will print from any application, you should always verify that the correct printer and paper size are being used. Select **Page Setup** from the file menu, choosing the **PF-Pro** printer and **CD/DVD 120mm** in the **Format For** and **Paper Size** selections, respectively.

It is highly recommended that the image you are printing is 120mm by 120mm. Having a different size image may result in the improper placement of the image on the disc.



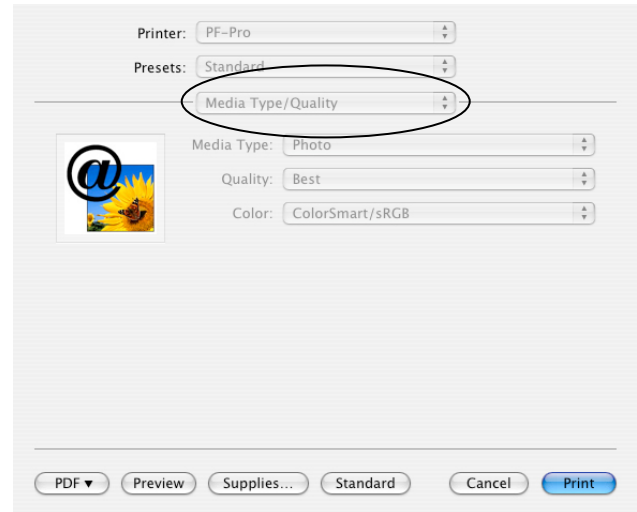
Changing Print Quality

To change the Print Quality, click the **Advanced** button on the **Print** screen. Select the **Media type/Quality** option from the list circled to the right. The settings to the right will appear.

You can select either **Photo** or **Graphics and Text** as the **Media Type**. **Photo** will take longer to print and will use more ink, but the quality will be higher. **Graphics and Text**, on the other hand, has a lower quality but will print in less time with less ink used.

You can also choose between **Draft** (Graphics and Text only), **Normal**, **Best**, and **Maximum dpi** (Photo only) from the **Quality** list. The choices are listed in order of lowest to highest quality and ink usage.

Color can be selected as **ColorSmart/sRGB**, **ColorSync**, or **Grayscale**.



Changing Print Diameters

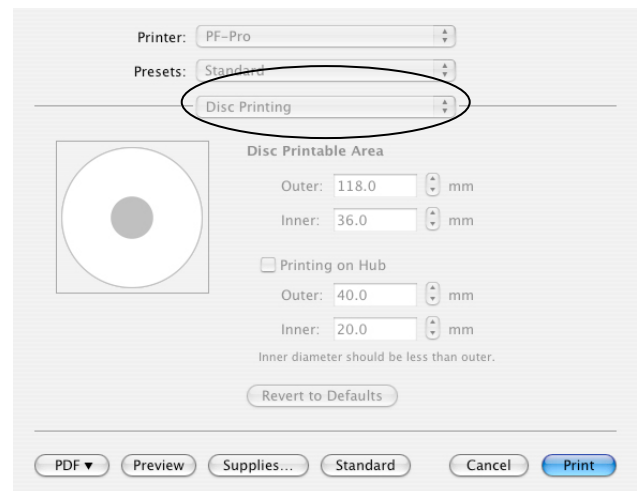
Different media types and brands may vary in the size of the printable surface. When the print surface changes, you will need to set the printer to the correct sizes.

Always make sure the images are printing centered on the disc before changing the diameter settings. If the image is not centered, please refer to page 10 for information on the alignment process.

To change the diameter of the printed area, click the **Advanced** button on the **Print** screen. Select the **Disc Printing** option from the list circled to the right. The settings to the right will appear.

The **Outer** setting will change how closely to the edge of the disc the image will print. Increase the Outer setting to leave less unprinted area at the outer edge. Decrease the Outer setting to leave more unprinted area at the outer edge..

The **Inner** setting will change how closely to the center of the disc the image will print. Decrease the Inner setting to leave less unprinted area at the center. Increase the Inner setting to leave more unprinted area at the center.



Please see the next page if the Disc Printing option is not available!

Note on Changing Print Diameters with Mac OS 10.6

Some applications, such as Preview, that can be used to print your image onto optical media may open by default in 64-bit mode when running under OS 10.6. If the application you are using does not include the **Disc Printing** options, but instead has the **SPS Printer PDE** option crossed out as shown below, your application is opening in 64-bit mode and the Print Diameters will not be available to you for modification.

However, your application can easily be set to open in 32-bit mode to give you access to the Print Diameter settings:

1. Close the application you are using to print the image file
2. Open the Applications folder in a Finder window
3. Select the application from which you are printing
4. Select **Get Info** from the File menu
5. Place a check in the **Open in 32-bit mode** setting
6. Restart your application
7. When you open the Print options, the Disc Printing options will be available for you to change as needed

Once 32-bit mode is set, the application will continue to open in 32-bit mode.

You should never have the printer attempting to print off the printable surface. This will leave unabsorbed ink on the disc.

Troubleshooting

Printer not printing

1. Confirm the PF-Pro Disc Printer is plugged into a power source and is turned on. The ON/OFF switch is located at the back of the unit, above the power cable connector.
2. Confirm the green LED on the power button is lit on the front panel, as shown below. If AC power is on and the green LED is off, press the power button and wait for several seconds. If the LED still does not come on, contact Microboards Technical Support.



3. Confirm the PF-Pro Disc Printer is connected to the computer, with a USB cable. This can be checked by clicking on Start, going to Settings and selecting Printers. Confirm the printer is listed and is active. If the icon is not active, make sure the Use Printer Offline is not selected or paused. Also check to make sure the correct printer port is selected.

Low Ink indication

The ink level of each cartridge can be checked in the Microboards Printer Utility (see page 10).

Additionally, the LED above each cartridge will light if that cartridge is at 25% or lower.

When the estimated ink level reaches 0%, the LED above the cartridge will begin to flash, warning you that the ink cartridge is empty.

It is strongly recommended that you replace the cartridge at this point. Continuing to run the PF-Pro Disc Printer with an empty cartridge may damage the printer.

If you notice poor ink quality or a missing color in your prints at any time, replace the ink cartridge.

Disc Loading error

1. If a disc is not loaded correctly, an error message will be displayed. Check to see if there are any discs on the belt. Remove any discs that are left on the belt.
2. Lift the cover and check for any discs on the front deck of the PF-Pro Disc Printer. Remove any discs found on the belts. Close the cover.
3. Next, reload the input bin and click the OK button on the error message to continue. The system will load the next disc and continue printing the remaining discs for that job.

Gaps or Overlap in Ink Coverage

There are 2 possible causes:

1. You may be printing in a low-quality mode. Change the Media Type and Print Quality to the next higher setting and print again. See page 14 for details.
2. The printheads need to be realigned. Please refer to page 12 for details.

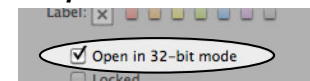
Print Diameters not Available

If you are printing from an application with Mac OS 10.6, you may need to specify that the application opens in 32-Bit mode to access the Print Diameters. To do so, open the Applications folder in a Finder window, and click the application with which you are printing your image file. With the application highlighted, select **Get Info** from the File menu and check the **Open in 32-bit mode** option.

Re-launch the application, and the Print Diameters will be available.

This will only be necessary if the Print Diameters cannot be accessed using the default application setup.

Please refer to page 15 for more information.



Printing Specifications

Print Speed: Depends upon percentage of coverage and print mode selected:

- Approx. 45 seconds for 100% full-color coverage, Photo Normal Mode
- Approx. 20 seconds for 100% full-color coverage, Text & Graphics Best Mode
- Approx. 12 seconds for 20% coverage Text & Graphics Normal Mode

Ink Cartridges:

Microboards PFP-HC-CYAN, PFP-HC-MAGENTA, PFP-HC-YELLOW, and PFP-HC-BLACK

Printheads:

Yellow and Black: CG316A
Cyan and Magenta: C9382A

Media Types:

Printable-surface 120mm CD-R or DVD-R

Maximum Print Width:

4.72" (120mm)

Power Supply:

Auto Detect AC Power:

90VAC – 240VAC, 47Hz – 63Hz

Warranty:

One Year Limited Warranty

Print Technology:

HP Inkjet

Print Quality, Black: 600 x 600 dpi

Print Quality, Color: up to 4800 x 1200 optimized dpi

Memory:

32 MB

Connectivity:

USB 2.0 required

Technical Support

For technical questions or support issues, contact Microboards Technology technical support:

United States

PH: 952-556-1639

FAX: 952-556-1628

support@microboards.com

www.microboards.com

Europe

PH: +44 (0) 845 230 7800

www.microboards.co.uk

Japan

PH: 03-3561-2266

www.microboards.co.jp

Please have the Model and Serial Number of your PF-Pro Disc Printer available when contacting Technical Support.