PowerPro II Printer

Version IIAa

Table of Contents

Introduction

Figure 1:   CopyPro PowerPro II CD Printer shown with optional Business Card CD Tray

PowerPro II CD Printer

The CopyPro PowerPro II CD Printer is a thermal transfer printer capable of printing labels up to 600 dots per inch (DPI) on several types of CD-R, DVD-R or CD-ROM media surfaces, using appropriate wax/resin thermal transfer ribbons. CopyPro's thermal transfer CD labeling technology allows creation of cost effective, durable, waterproof labels that are printed directly on the surface of the disc.

The PowerPro II CD Printer prints CD labels designed using the CopyPro CD Labeling software (**CD Painter** software). Labels created with the **CD Painter** software can contain text, and graphics. The **PowerPro II Printer Driver** for the Windows environment controls the operation and performance configurations for the PowerPro II CD printer. The **PowerPro II Printer Driver** must be installed prior to printing with the PowerPro II CD printer.

PowerPro II CD Printer Key features

The CopyPro PowerPro II CD Printer offers several features not found on other CD printers:

- Instant re-print of last label printed

- Removable CD trays for printing on variety of business card shapes discs

- Flip open chassis to allow easy ribbon changed or printhead maintenance

- Software and hardware support for automated printing systems

Printer Installation Overview

The PowerPro II User's Guide, includes:

Quick Setup Directions

- These are brief instructions for printer and software setup by technical computer users

Standard Setup Directions

- These are more detailed instructions for printer and software setup by non-technical computer users

General information and Appendix follow Setup Directions

- Printer maintenance
- Ribbon replacement
- Optimizing label print quality

Quick Setup Directions

Unpack Printer
- Remove Printer from shipping box and foam inserts

Printer is shipped with:
- Power Cable
- Data cable
- Printer Software (CD-ROM disc)
- Printer is shipped with a black ribbon installed

Connect printer to computer and power
- Data cable is Grey (DB-25 to DB-25 type of cable) that connects to computer's parallel port
- Power Cable connects to 110/220 VAC power
- Note: power supply is auto switching and compatible with 110/220 VAC power

Install Printer Driver Software
- Printer Driver Software is located on PowerPro Software CD-ROM
- The printer driver are located in PowerPro II directory
- Follow standard printer driver install or *Add Printer Wizard* procedures and select appropriate drivers the version of Windows on the computer connected to the printer

Install CD labeling software (CD Painter Software)
- CD labeling software is located on PowerPro Software CD-ROM
- The CD labeling software is located in CD Painter directory
- Follow standard software install (add program) procedures and select the Setup file for **CD Painter** application

Start CD labeling software (CD Painter)
- Load blank CD (label side up) into printer (Press Tray button on printer to open tray
- Click on **CD Painter** Icon to start program
- Create Label design and save label to a file
- Select PowerPro II Printer Driver
- Select File Menu, then Print, (confirm PowerPro II is selected) then Click OK to print.

Installation - Unpacking
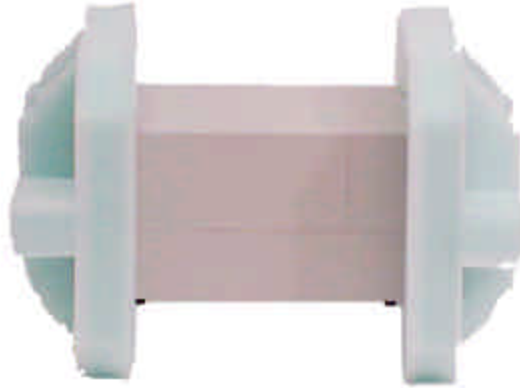
Figure 2: PowerPro II, unboxed, but still in protective shipping foam

Unpacking

- Open the top of the box

- Lift the PowerPro II by gripping the underside of the narrow sides of the unit

- Set the PowerPro II and foam on a sturdy, flat surface

- Support either end of the PowerPro II with an arm and carefully pull the foam off the elevated end. Repeat for the shipping foam on the other end

Note:

- Printer is shipped with black ribbon installed

- Printer is shipped with top cover secured by plastic wrap

Re-packing for shipment

- Important: Make sure Printer Chassis is locked. Check by lifting chassis up, chassis should not move. To re-lock, pull Chassis Lock Knob out, then release and check by lifting chassis, when locked the chassis will not open. (See Parts Identification section for location of Chassis Lock Knob)

- When re-packing for shipment, secure outer top cover by plastic wrap or tape before placing printer into foam pieces

Installation - Parts Identification

You should become familiar with the parts of the printer before attempting to operate it. See the **Maintenance** section of this manual for help installing printer ribbons.

- Power switch
- Control panel
- Printer ribbon
- Ribbon supply roller
- Take-up roller (geared)

- Roller clips
- CD Tray
- Parallel Port
- Power Cord
- Autoloader Port

Printer ribbon:
Supply roller
Take up roller

Roller clips
Control panel
CD Tray
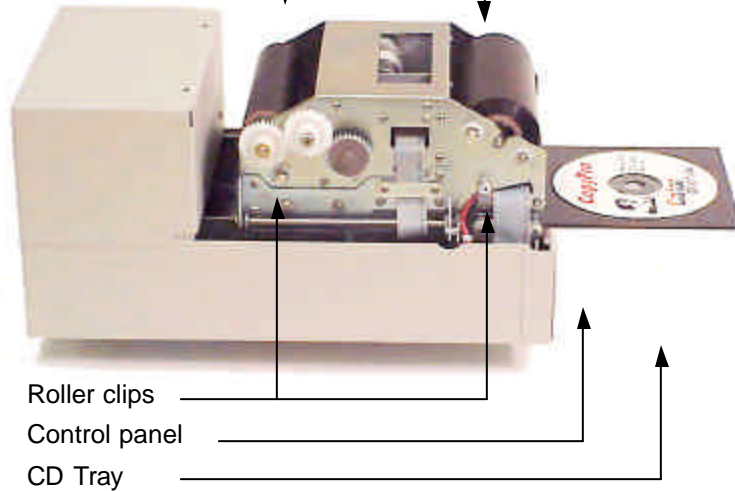
Chassis
Note: Chassis flips up to allow ribbon replacement

Tray Release button
Chassis Lock Knob
Power Switch
Power and Data connectors
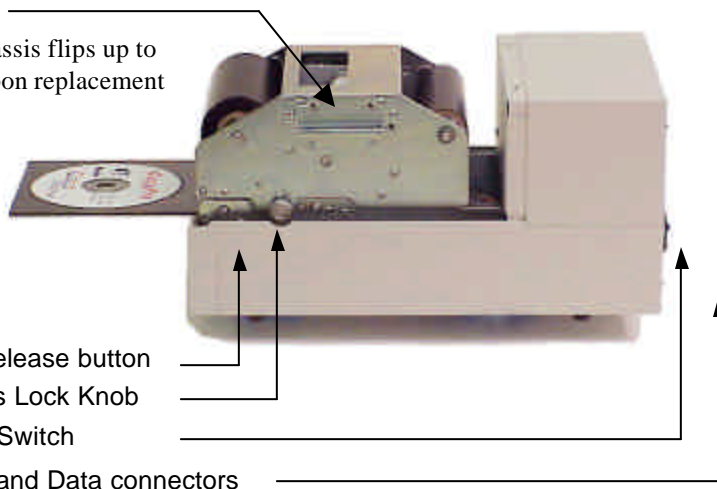
Installation - Connecting the Printer

Power connection

Parallel port
Autoloader port
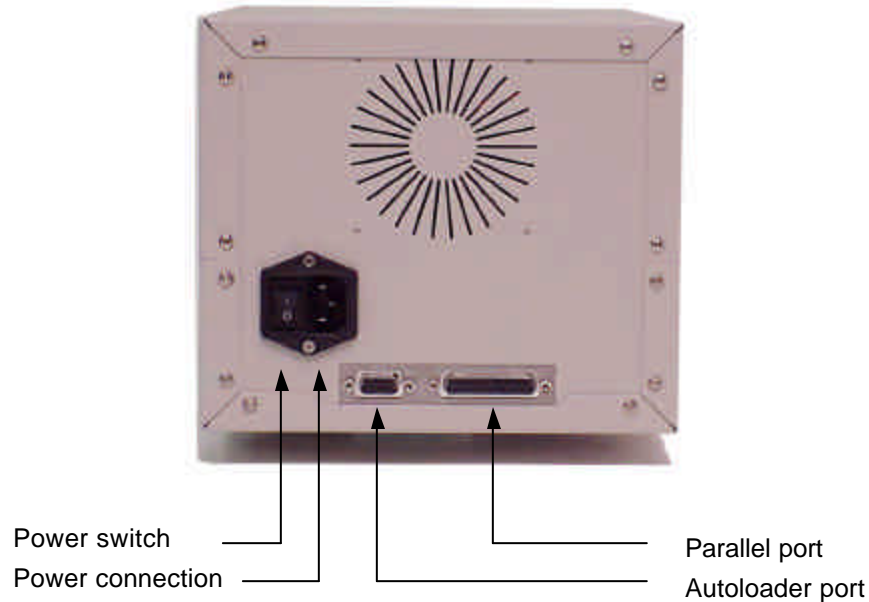
Figure 3:   PowerPro II data and power connections

Connecting the Printer

The CopyPro PowerPro II has two main connections for operation:

- AC power connection – for 110/220 VAC power

- Parallel port connection – DB-25 "straight through" cable

Before operating the PowerPro II, make sure these connections have been made:

- Plug the supplied power cord into the power connection at rear of the PowerPro II

- Connect the supplied parallel printer cable to the parallel port on the PowerPro II, and to the printer port on your host computer

- Printer is shipped with a black ribbons installed. If a printer ribbon is not installed, follow the instructions in the **Installing Print Ribbon** section

PowerPro II Printer Driver Installation

Figure 4:   PowerPro Software CD

PowerPro Software

The PowerPro II requires:

- Printer Driver for Windows 98, NT, or 2000

- PowerPro CD labeling software

This software is on the PowerPro Software CD included with printer.

Printer Driver

The printer driver controls the operation for the PowerPro II. The printer driver must be installed prior to using the PowerPro II for the first time. The printer driver installation varies with the version of Windows used, see detailed instructions for specific version of Windows. The printer driver allows the CopyPro CD Labeling software or other labeling programs to be used with the printer.

CD Label Software

The CD Label Software, which is named CD Painter, is used to create the label that will be printed on the CD. The CD Label Software provides tools to incorporate text and graphics of the label. The CD Label program provides convenient CD templates that correspond to a variety of CD media. In addition, the CD Label software can import graphic files (such as entire labels) from other programs.

Printer Driver Installation for Windows 98

In order to print labels on discs, the PowerPro II printer needs to be connected to a computer that has the PowerPro II printer driver software installed. The printer driver software controls the printer's functions and allows adjusting the print density (darkness or lightness of label), and other printing characteristics. Typically, when printing a disc label, the printer driver dialog box is displayed showing the name of the printer and choices for selecting number of copies and selecting printer properties. Listed below are instructions for installing the PowerPro printer driver for Windows 98.

Printer driver installation for Windows 98:

- Place PowerPro II CD-ROM disk into computer's CD-ROM drive

- Click on *Start* from Windows Menu Bar

- Select *Settings*

- Click on *Printers*

- Double click *Add Printer*

- Click *Next*

- Click *Have Disk* button

- Click *Browse*, under Drive List Box, select the CD-ROM drive that contains PowerPro II CD-ROM disk

- Double Click Drivers PowerPro 2A folder

- Click on Win98 folder

- Select PPRO_2A.INF and then Click *OK*

- Click *OK* again

- Confirm that CopyPro PowerPro 2A is selected and Click *Next*

- Select LPT1: *Port*

- Click *Next*

- To set the PowerPro II Printer as Default, select *Yes* (select *No* if another printer is normally the default printer)

- Click *Next*

- When prompted to print test page, select *No*

- Click *Finish*

- Windows 98 requires re-starting computer to complete the installation process

Printer Driver Installation for Windows NT

In order to print labels on discs, the PowerPro II printer needs to be connected to a computer that has the PowerPro II printer driver software installed. The printer driver software controls the printer's functions and allows adjusting the print density (darkness or lightness of label), and other printing characteristics. Typically, when printing a disc label, the printer driver dialog box is displayed showing the name of the printer and choices for selecting number of copies and selecting printer properties. Listed below are instructions for installing the PowerPro printer driver for Windows NT.

Printer driver installation for Windows NT:

- Place PowerPro II CD-ROM disk into computer's CD-ROM drive

- Click *Start* button (found on Windows toolbar)

- Select *Settings* (a list will be displayed)

- Click on *Printers*

- Double Click *Add Printer*

- Select My Computer

- (If not selected, Click *Next*, Select LPT1:, Click *Next*, Click *Have Disk Button*

- Click *Browse*, click *Cancel* when A:\ is not accessible

- Select the CD-ROM Drive that has the PowerPro II Software CD

- Double Click Drivers folder

- Double Click PowerPro II folder

- Double Click WinNT folder

- Double Click Color folder

- Select PPNTC600.INF

- Click *Open*, then Click *OK*

- Select CopyPro PowerPro Color

- Click *Next*

- At Printer Name Click *Next*

- Set settings to *Not Shared*

- Click *Next*

- When prompted to print test page, Select *No*

- Click *Finish*

- Re-start Computer

Printer Driver Installation for Windows 2000

In order to print labels on discs, the PowerPro II printer needs to be connected to a computer that has the PowerPro II printer driver software installed. The printer driver software controls the printer's functions and allows adjusting the print density (darkness or lightness of label), and other printing characteristics. Typically, when printing a disc label, the printer driver dialog box is displayed showing the name of the printer and choices for selecting number of copies and selecting printer properties. Listed below are instructions for installing the PowerPro printer driver for Windows 2000.

Printer driver installation for Windows 2000:

- Place PowerPro II CD-ROM disk into computer's CD-ROM drive

- Click *Start* button (found on Windows toolbar)

- Select *Settings*

- Click on *Printers*

- Double Click *Add Printer*

- Click *Next* at Add Printer Wizard, make sure Local Printer is selected, then click *Next*

- Select LPT1: then Click *Next*

- Click Have Disk Button

- Click *Browse*

- Select the CD-ROM Drive that has the PowerPro II Software CD

- Double Click Drivers folder

- Double Click PowerPro II folder

- Double Click WIN2000 folder

- Select PowerPro II, Click *Open*

- Click *OK*

- Highlight CopyPro PowerPro II, Click *Next*

- Select *Yes* to set printer as default, Click *Next*. (this makes the PowerPro printer selected first over other printers attached to the computer.

- Select *Do Not Share* this printer, Click *Next*

- When prompted to print test page, Select *No*

- Complete the Add Printer selection, Click *Finish*

- Wait for the Driver installation process to finish, then re-start the computer

Label Software Installation

The CopyPro Label Software (named CD Painter) is a graphics program with built-in disc label templates that allow the design and creation of labels to be printed on CD media. The CD Painter software is supplied on the PowerPro Software CD-ROM.

Windows 98: Installation of CD Painter software:

- Place PowerPro II Software CD into CD-ROM drive
- From Windows Desktop, Click on: *Start Icon*
- Select *Settings*, Click on *Control Panel*
- *Double Click* on *Add Remove Program Icon*,
- Click *Install*, Follow *Prompts*
- Click *Browse*, then browse for CD-ROM drive
- *Select* CD-ROM drive, *Select* CD Painter Folder
- *Select* and *Double Click* on SETUP.EXE from PowerPro II CD-ROM from CD Painter directory and follow *Prompts* to install the CD Painter software
- Run the **CD Painter** software and create a CD label

Windows 2000: Installation of CD Painter software:

- Place PowerPro II Software CD into CD-ROM drive
- From Windows Desktop, Click on: *Start Icon*,
- Select *Settings*
- Click on *Control Panel*
- Double Click on *Add Remove Program Icon*
- *Select* Add New Programs, Follow *Prompts*
- Click *Browse, Browse* for CD-ROM drive
- *Select* CD-ROM drive, *Double Click* on CD Painter Folder
- *Select* and *Double Click* on SETUP.EXE from PowerPro II CD-ROM from CD Painter directory and follow *Prompts* to install the CD Painter software
- *After Clicking* on Finish, re-start computer
- Run the **CD Painter** software and create a CD label

Windows NT: Installation of CD Painter software:

- Place PowerPro II Software CD into CD-ROM drive

- From Windows Desktop, Click on: *Start Icon*,

- Select *Settings*

- Click on *Control Panel*

- Double Click on *Add Remove Program Icon*

- *Select* Add New Programs, Follow *Prompts*

- Click *Install, Browse* for CD-ROM drive

- *Select* CD-ROM drive*, Double Click* on CD Painter Folder

- *Select* and *Double Click* on SETUP.EXE from PowerPro II CD-ROM from CD Painter directory and follow *Prompts* to install the CD Painter software

- After Clicking on *Finish*, re-start computer

- Run the **CD Painter** software and create a CD label

Printer Operation

Once the PowerPro II is properly connected to the host computer, printer ribbon installed, and the printer driver and CD Painter software are installed on the host computer, the printer is ready for use.

CD Printing Sequence Overview

- Connect printer power cord

- Connect printer to computer parallel port

- Computer must have PowerPro printer Driver and CD Label software installed

- The printer driver should be set to Black and White if black ribbon is used or Color if color ribbon is used. Printer driver should show strobe set to 25 (see chart on following page.

- Power ON printer

- Load CD into printer tray (press TRAY button to open printer tray)

- Create a CD label using the CD Labeling software

- Save the Label file

- Print the label

- If print is too light or too dark, try adjusting printer driver's print strobe setting and print another disc from label software program

- The CD label is now stored in the printer re-print buffer, press PRINT button on printer's control panel allows printing additional copies of this label.

Power ON and OFF information

- If the power cord is not already connected, make sure the power switch is off before connecting the power cord.

- If the power cord is connected, then turn the power switch ON to power up the PowerPro II. The PowerPro II CD Printer will flash Status LEDs and advance ribbon. If Black ribbon is detected status LEDs will flash twice, if color ribbon detected the LEDs flash four times. When power on process is complete printer will show Ready LED. If an error, such as no ribbon is detected printer will flash status LED with error code. See error code listing in the appendix for more details.

- To shutdown the PowerPro II, make sure no print jobs are executing, and turn the power switch OFF. Always shutdown the PowerPro II with the power switch, and avoid disconnecting the power cord with the power ON.

Printer Ribbon Installation

The thermal transfer ribbons used by the PowerPro II must be installed correctly for proper label printing. See the Maintenance section for ribbon installation instructions.

CD Label Printing Steps

Printing a CD Label with CD Painter

To begin printing labels on CD media, first follow the Power Up and Loading procedures outlined in the *Printer Operation* section

1) *Select* the **Print** from the File Menu of the **CD Painter** software

2) Make sure the PowerPro II is selected as the printer to be used.

3) Important: In Properties area *select* appropriate Color or Black and White selection in print driver to match the type of ribbon (Color or Black) used in the printer

4) Important: In Properties area check that Strobe Setting, which controls print density (darkness or lightens of label) is set to the CD Painter's recommended strobe settings are shown below.

For steps 4 and 5, please see Maintenance section for more detail on Printer Driver settings

Resolution	600 DPI mode		300 DPI mode	
Ribbon type	Black	Color	Black	Color
Strobe Setting	25	45 to 65	25	45 to 65

Figure 5:   Recommended strobe settings

5) When all preferences are set as desired, click 'OK' to begin printing the current label.

6) After one CD has been successfully printed, the label image is stored in the printer's memory. Successive prints can be done manually by pressing the 'Print' button after loading a new disc. The label image stored in memory is lost after shutdown (power off).

Note: A CD label printed on the PowerPro II is stored in the PowerPro II's memory as long as the PowerPro II is ON. Only one CD label will reside in the PowerPro II's memory at a time. To re-print additional CDs with this stored label, open printer tray by pressing the TRAY button, load an unlabeled CD, then press the PRINT button on the printer's control panel.

7) See the *CD Painter User's Guide* for instructions using *CD Painter* to create CD labels. Follow the procedures in the *CD Painter User's Guide* to get a label file ready for printing.

Control Panel Operation

PowerPro II keypad

The PowerPro's Control Panel consists of three buttons and status LEDs, which controls the operation of the PowerPro II as described below.
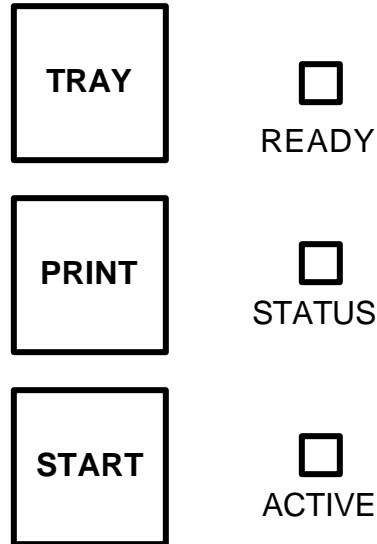
Figure 6: PowerPro II Control Panel

Tray Button

The '**Tray**' button will extend and retract the CD tray. Use this button for manually opening the CD tray for loading and unloading CD media

Print Button

The '**Print**' button is used to reprint the most recent label. The CD tray is closed automatically when the print is started.

Start Button

The '**Start**' button is used to re-start printer after and error condition (ex. Ribbon out) is cleared. Pressing '**Start'** resets the printer and may allow quick resumption of the print job. (Some errors may require resubmitting the print file after pressing '**Start**')

Ready LED

This LED indicates printer is ON and ready to accept a print job

Status LED

This LED indicates error conditions by flashing error codes (See error code list section)

Active LED

This LED lights when printer is processing data or printing

Manual Loading CD Media

Prior to loading the CD

Before manually loading or unloading discs into the PowerPro II, first make sure the power is on and the 'Ready' LED is on. If the CD tray is already extended, a new CD may be placed with the printable side up on the cushioned surface. If the tray is not extended, press the 'Tray' button to open it. The printable side of the CD surface is facing up when the stacking ridge near the center edge of the CD is facing down, as shown below. Please note: DVD media will have stacking ridge on both sides of disc.

Printable Side Up
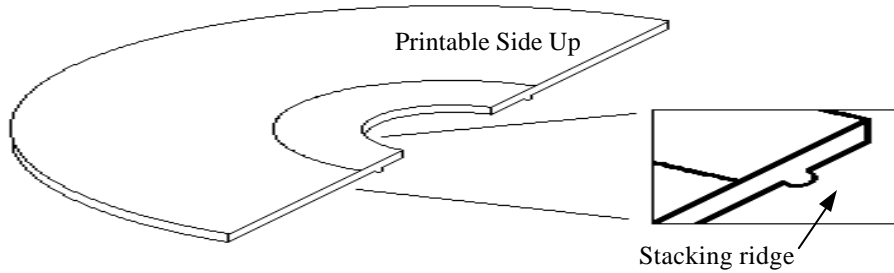
Stacking ridge

Figure 7:   CD Stacking Ridge.

Loading the CD

Place the CD on the cushioned surface so that it does not rest on any part of the CD Positioning Surface or on the centering pin. (See photo).

When the CD is properly positioned, press the 'Tray' button to retract the tray.

Note: When handling CD's, always grip the CD by only the center or outer edges. Avoid touching the flat surfaces of the CD. Fingerprints on the printable surface of the CD may make printing inconsistent.

Figure 8:   CD Tray open .

Printing CD Labels

For those new to the PowerPro II CD printer, CopyPro recommends experimenting with a single CD and using a label design that only covers part of the CD (for example a vertical bar). This allows repeated prints on the CD (by rotating the CD) and observing changes made by adjusting the printer driver and label software settings.

Many printing issues can be resolved with adjustment of strobe setting, media type, or graphics. For printing questions please contact your PowerPro dealer, if possible save label file in question for review.

Guidelines using appropriate ribbon, media, and graphics

1) Use of appropriate CD-R media for the thermal transfer printing

   - Silver media works best with a black ribbon

   - White thermal transfer type media with a <u>smooth surface</u> works best with color ribbon

   - White inkjet type media with a <u>rough surface will not</u> provide good results

2) Use of appropriate strobe setting (which controls the darkness or lightness of the label) for the type of CD-R media and label design

   - PowerPro II printer driver software's "Auto" strobe setting should work with most media

   - If label is too light try increasing the strobe setting in increments of 5 until label has best appearance. If printing does not improve try another brand of CD-R media.

   - If label is too dark light try decreasing the strobe setting in increments of 5 until label has best appearance. If printing does not improve try another brand of CD-R media. Typical strobe settings: Silver media 15, and white coated media 18

3) Use of appropriate text or graphics that are within the range of printer capabilities, labels that print best include:

   - Text only, line art, and clip art

   - Mixed text and graphics

   - Photos with limited range of colors

   - Spot colors

4) Labels that may not print properly are:

   - Large single color or revered out text or graphics

   - Photos with wide range of color gradient

PowerPro printer's multi-tray feature

Figure 9:   Printer with Standard CD tray installed and Business Card CD tray (Oval type) shown

Removable CD Tray System

The PowerPro II CD Printer uses different CD trays to handle different shaped CDs and DVD discs.

CD-R/CD-ROM/DVD Disc	PowerPro II CD Tray
• Standard Round Disc • 120MM	Standard Tray
• Mini Round Disc • 80MM	Mini Round Tray
• Business Card Disc • Oval Type	Business Card Oval
• Business Card Disc • Rectangle Type	Business Card Rectangle

Changing the CD Tray

Tray Release Button ─────────┐
Chassis Lock Knob ─────────
Note: Tray Release Button is located inside printer case
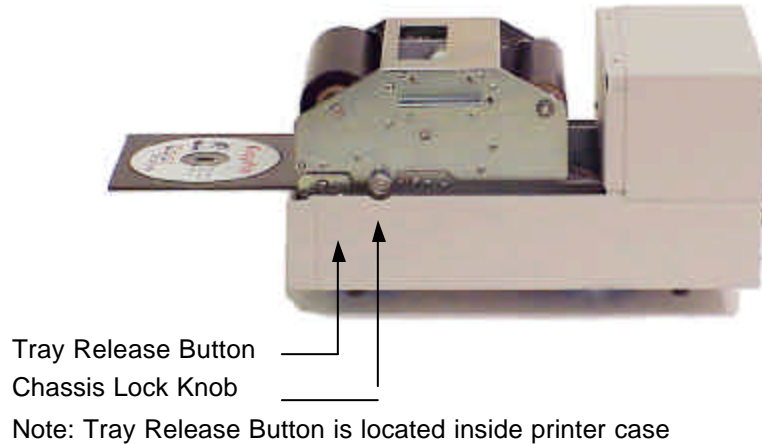
Figure 10:   PowerPro II Tray Release Button location

To Remove CD Tray

- Remove top cover

- From the Printer's front control panel: Press Tray button to extend tray

- Press Tray Release button (this is a small metal button located near Chassis Release Knob)

- Hold CD Tray with left hand and pull outward, while pressing Tray Release button

- CD Tray should disengage from printer

To Insert CD Tray

- Turn OFF Power, and remove top cover

- If there is a CD Tray in printer, remove CD tray from printe

- Hold CD tray in front of printer, with circular disc end oriented outward

- Gently guide end of tray into printer

- Try to guide CD Tray straight into printer

- Stop when Tray is at least halfway into printer

- Power ON printer

- At Power ON printer will bring tray into printer at proper position

Maintenance: General

To keep the PowerPro II functioning at its best, follow these Usage Guidelines:

Storage

- Keep the PowerPro II on a flat, stable surface.
- Keep the PowerPro II in a room temperature environment, and away from excessive heat or cold

Startup and Shutdown

- Always use the power switch when powering up or shutting down the PowerPro II
- A power strip (surge protector) is always a good way to protect electronic equipment, but is not meant as a means of turning on/off the power to the PowerPro II

Maintenance: Printer Ribbon Installation

Printer ribbon:
Supply roller
Take up roller
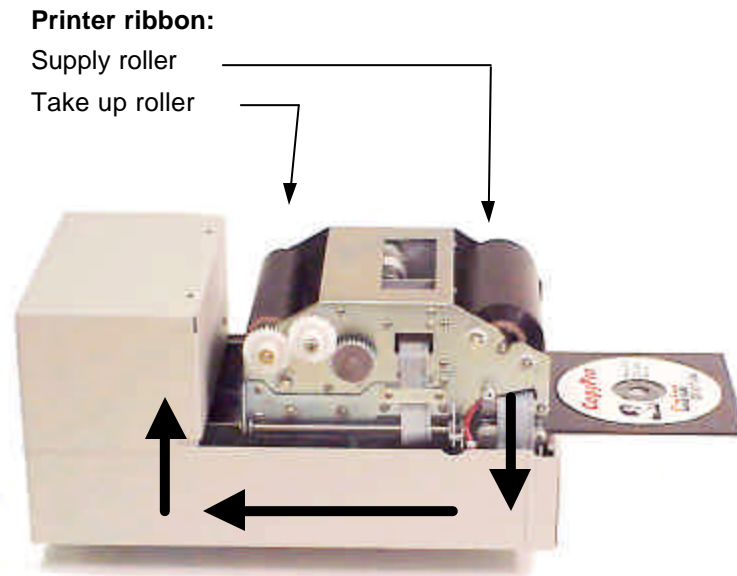
Figure 11:   Direction of ribbon travel shown with arrows

Chassis Lock Knob

Figure 12:   Printer Chassis shown closed and open

Installing Print Ribbon

The Ribbon Installation procedure is easiest to perform with the CD tray open. It is recommended that the PowerPro II be turned OFF during ribbon installation.

General information

- The PowerPro II uses ribbon rollers to hold the supply ribbon (ribbon rolled on tube) and the take up core (empty cardboard tube).

- The supply ribbon is put on a silver roller and the take up core is placed on a grey (geared) roller

- The supply ribbon roller is placed in slots in the front of the printer

- The take up core is placed in slots in central area of the printer

- The ribbon is threaded around the chassis and attached to the take up core using the adhesive strip on the end of the ribbon (or adhesive tape).

- After the rollers are placed in the Printer Chassis, the chassis must be opened to thread ribbon through the printer

- Open Printer Chassis by pulling out Chassis Lock Knob

- Lift Printer Chassis upward

- When printer ribbon is installed, close chassis gently, see that Chassis Lock Knob clicks into place.

- Confirm that chassis is locked by lifting chassis upwards, chassis should not open.

- Ribbon is now installed and Printer ready for printing CD Labels

- Please see Printer Ribbon Installation Chart for more details.

Printer Ribbon Installation Chart – Part 1

Remove Cover

Locking clips

- Remove the top cover by carefully lifting and pulling forward. Remove used ribbon from printer

Note: Ribbon rollers are held in place by locking clips secured by thumbscrews. Loosen but do not remove thumbscrews to adjust roller clips.
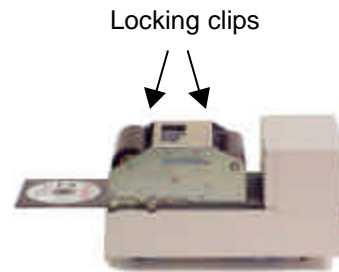
Load Ribbon Rollers

- Insert the Supply Ribbon core on to the silver Supply spindle (shown)
- Insert the take up core on to the grey take up spindle

Note: Ribbon Roller has a metal pin that fits into a notch ribbon cores

Pin

Putting Rollers in printer

- Supply Roller is placed into area at the front of the printer.

Note Supply Roller has metal shaft with square end that fits into square hole in printer frame

- Take up core is placed in area at in the middle of the printer.

Note Take up core Roller has metal shaft with round end that fits into round hole in printer frame

Open printer chassis

- Open printer chassis
- Pull out chassis knob, to release chassis lock

Note: Lift chassis up using handle on side of the chassis. Printer chassis will stay in vertical position when it is fully opened

Chassis Lock Knob
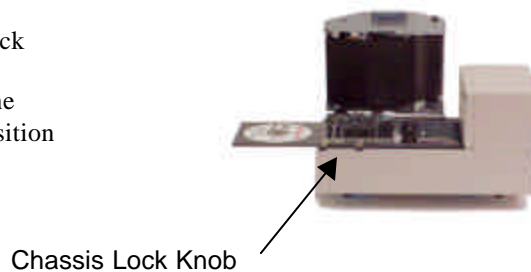
Printer Ribbon Installation Chart – Part 2

Feed ribbon from Supply to Take up Roller

- Take end of ribbon from Supply Roller and pull toward the rear of printer

- Take ribbon around backside of Take up Roller

- Close printer Chassis

Note: Check that Chassis Lock knob has slipped into locked position.

- Attach ribbon to Take up Roller

  New ribbons: the ribbon has a leader with an adhesive strip, use this strip to adhere the ribbon to the cardboard core of the Take up Roller

  Used ribbons: use adhesive tape to secure the ribbon to Take up Roller

Chassis Lock Knob

Wind ribbon to remove slack

- Power ON printer. Printer will wind ribbon as part of start up sequence

- Ribbon can also be wound by pressing Start and Print buttons simultaneously

- Ribbon change complete, check software settings for proper color or black ribbon selection prior to printing.

Start & Print keys

Maintenance: Printhead

Figure 13:   Printer open showing printhead

Cleaning the Print Head

If the CD prints begin to look smeared or develop vertical streaks, it may be time to clean the print head. The printhead uses a row of heat producing "printing elements" to heat the ribbon to transfer label ink to the disc. Typically the printhead may have a dust particle or possible a melted piece of ribbon adhered to the heating elements. These particles prevent the printhead from transferring ink to the disc label. Cleaning the printhead, consists of rubbing a cotton swab soaked in alcohol (use standard alcohol typically available at drug stores that is labeled Isopropyl or rubbing alcohol) over the printing elements to remove any debris.

Important: The printhead is fragile and can be damaged by improper cleaning. Only use cotton swabs with alcohol to clean the printhead. The printhead heating elements can be damaged if touched by hard or abrasive objects. A damaged printhead may leave "white" vertical lines through all labels, requiring replacement of printhead for proper label appearance.
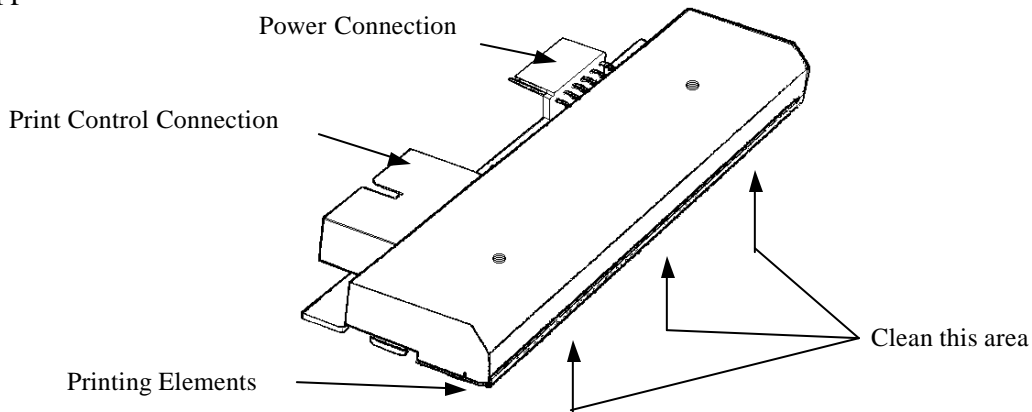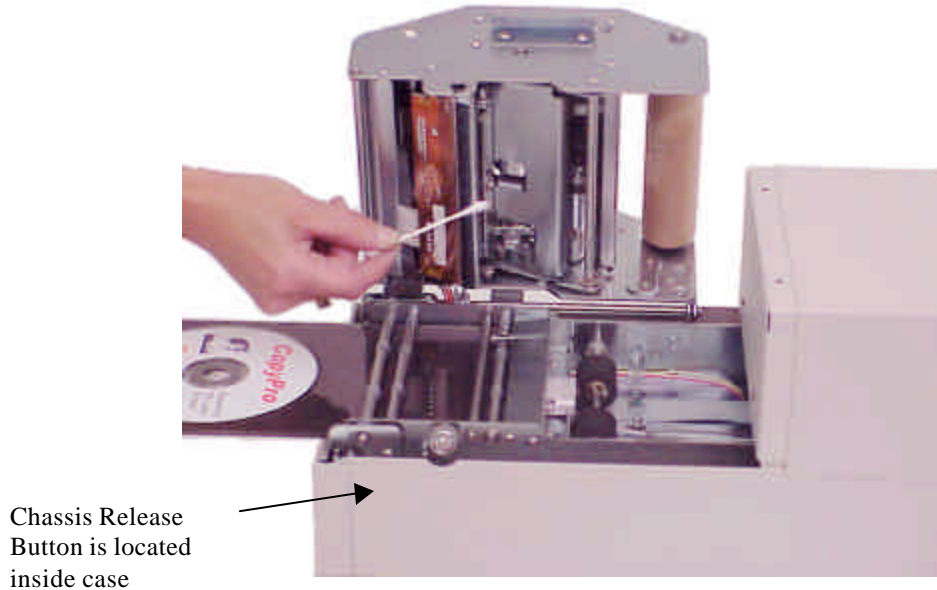

Figure 14:   Printhead Unit.

Chassis Release
Button is located
inside case

Figure 15:   Printhead cleaning with ribbon removed

Printhead Cleaning Procedure

- If tray is in, press Tray Button to extend tray

- Remove the top cover by carefully lifting and pulling forward. Set the cover aside.

- Open printer chassis by: Pulling chassis release knob and lifting chassis up by chassis handle

- Remove Ribbon Supply Roller from printer and place on CD Tray, this will expose the printhead. (As an alternative remove ribbon completely from printer)

- Printhead is now visible from the inside of Printer chassis

- Move the Supply Ribbon roller and ribbon forward and away from the front of the unit, exposing the printhead.

- Use a cotton swab or Q-tip with a few drops of isopropyl alcohol to gently rub the printing surface of the print head.

- Use a sweeping motion starting from one end of the printhead to past the other end to remove any dust particles (do not lift up Q tip in middle of printhead since that may leave residue in that area)

- Allow the printhead a minute to dry before moving ribbon spindle back on to chassis

- Printer will wind slack ribbon at power ON, or pressing Start and Tray button simultaneously will also wind slack ribbon
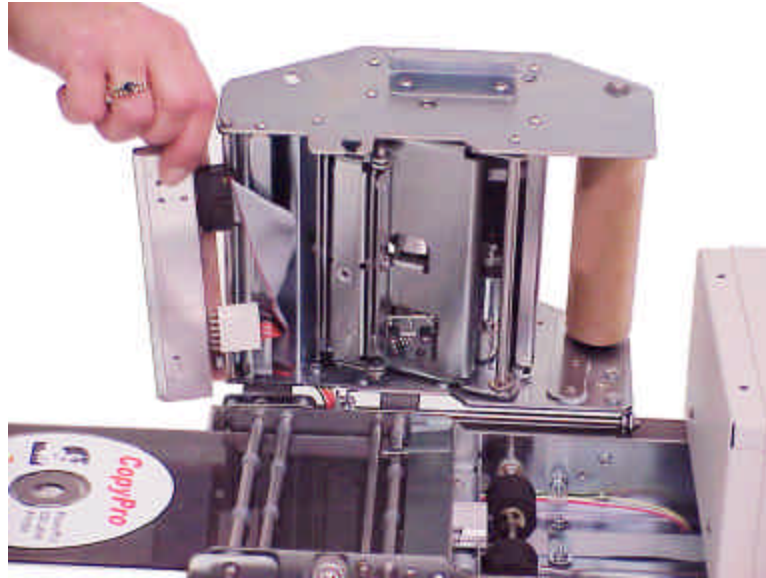
Printhead Replacement

Figure 16:   Printhead partially removed

Replacing the Printhead

A damaged printhead may leave "white" vertical lines through all labels, requiring replacement of printhead for proper label appearance. If the print head must be replaced, use the following guidelines for replacing the print head.

Note: A "dirty" printhead may produce prints similar to a damaged printhead. Always clean the printhead and check with a test print to determine if printhead is not damaged, but only needs to be cleaned.

Cautions in handling printhead

Important: The printhead is fragile and can be damaged by improper handling. The printhead heating elements can be damaged if touched by hard or abrasive objects.

Important: Always place printhead on clean soft cloth or paper towel. Do not place printhead on metal or other hard or abrasive surfaces. Printhead heating element area is fragile.

Important: The printhead's power connector has three black ground wires. The black ground wires must be connected to the pins of the power connector closest to the center of the print head.

Printhead Replacement Procedure

Power Connection

Print Control Connection

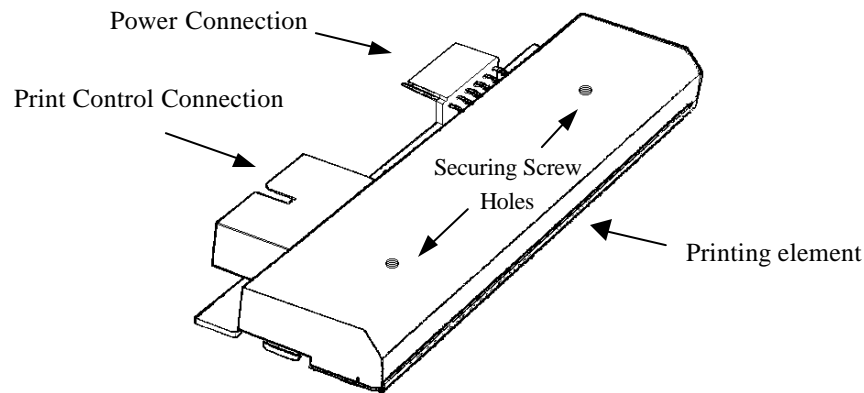Securing Screw
Holes

Printing element

Figure 17:   The printhead's printing element is fragile, avoid touching the printing element

To replace printhead, you will need the following tools:

- Phillips-head screwdriver

Important: Always turn power off and unplug printer prior to removing print head.

Important: The printhead is fragile, avoid touching the printing element, always store printhead on soft area such as clean paper towel

Wait until all printing has finished, and remove any CD still on the Tray.

- Power off and unplug printer
- Remove the top cover, remove ribbon, and set aside.
- Printhead is head by two Philips head screws
- Look down top of chassis to locate Philips head screws
- Use screw driver to loosen screw (note: screws are captive and will not fall out)
- Open Chassis (pull chassis knob out, and lift chassis)
- Printhead will hang from two cable connectors
- Note the position and orientation of the connectors
- Remove printhead from cable connectors, and place aside
- Attach cable connectors (noting orientation) to new printhead
- Lightly hold printhead in place and tighten the two Philips head screws
- Close chassis and completely tighten screws
- Printer now ready to resume operation

Printhead Replacement, cont'd.

Figure 18:   Printhead is retained by Philips type screws accessed from top of printer
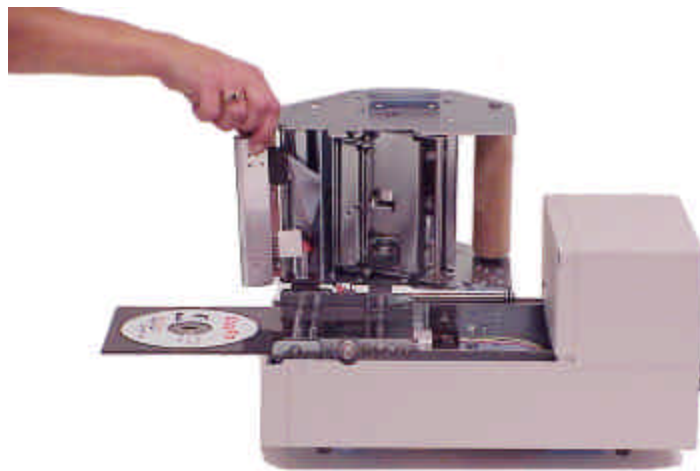
Figure 19:   Printhead power and data cables shown after printhead screws removed

Troubleshooting Section

Quick Recovery Strategy

- Clear error condition (if needed, see Error Code Chart at end of this document)

- Press "START" key (to reset printer) or power Printer OFF and then back ON

- Re-try printing label

Test CD Strategy

- For testing printer issues, make sure a CD is loaded in printer's CD Tray

- To conserve media, while testing, test print with small label, and rotating the CD after each print, this allows multiple test prints on a CD

Common Printer Issues

Printing Issues

- Fingerprints on CD may cause unprintable areas

- Strobe setting (CD label is printing too light or too dark)

- Printer driver set for Color when Black ribbon is installed (error results when printing)

- PowerPro Printer driver not selected, therefore computer is not sending print data to printer

- Parallel port on computer is set to ECP, SPP or EEP Modes, (change Parallel Port setting to Normal mode)

Troubleshooting Section: Printer is not printing checklist

Use list below to determine cause for non-printing printer error.

Cables and connections

- Check "Status" LED for flashing Error Code (See ERROR CODES Chart below)

- Check all power connections, and make sure the printer is ON and "Ready" LED is ON.

- Make sure the printer cable is connected to the parallel port on the PowerPro II, and on the printer port of the host computer.

- Make sure there is a CD loaded properly on the tray.

- Make sure the PowerPro II Printer Driver is selected as the Windows print destination.

  - From Windows, select FILE menu, then PRINT, a dialog box will appear and the PowerPro II printer should be listed. If not click on dialog box to select PowerPro II. If PowerPro II is not shown as a selection, then the PowerPro II printer driver needs to be installed.

- Make sure Printer Driver is set for Black & White printing if Black ribbon is installed

- Make sure Printer Driver is set for Color printing if Color ribbon is installed

Active LED shows activity, but no label is printed

- Check if "Active" LED does not light, after issuing a print command.

  - Windows 98 may not operate properly with very large graphics files, test by printing CD label with smaller graphic files to check printer operation. Try printing label with PowerPro Printer Drive set to 300 DPI. Also, try reducing file size as needed or attempt to print label by using Windows NT/2000 host computer

Parallel port setting on computer

- Make sure the Computer's Parallel Port mode is configured as: Normal, Compatible, SPP or Output Only. <u>Normal is the recommended setting</u>. Note: ECP Mode works with most systems.

  To check parallel Port configuration requires checking the Computer's BIOS Settings and setting the Parallel Port setting to Normal.

  To check Computer BIOS settings:

  - Power OFF the computer

  - Power ON the computer

  - As the computer starts up it will display a message on how to check computer BIOS setup.

  - Usually, this requires pressing the DEL or ALT or F2 or some other key

  - After pressing the appropriate key, a list of choices or menu will be displayed

  - Choose to review the advanced settings, look for Parallel Port Mode listing or Integrated Peripherals listing

- Proper settings are:

- If any of these settings are used, exit the BIOS settings by selecting Exit without saving changes.

- Parallel Port Mode setting shows: ECP or EPP

- Change to: Normal

- Exit the BIOS settings by selecting Exit with saving changes.

- Shutdown then re-start computer, then start CD Painter Program and try printing a CD label.

Troubleshooting Section: Print Quality

Fuzzy prints and smudges
- Make sure the CD print surface is a printable (lacquer or matte) surface.
- Check the CD surface for fingerprints, oils, etc.
- Clean the printing surface of the CD.
- Make sure the print ribbon is a supported ribbon type
- Check the CD position.
- Check the Printing Alignment in the CD labeling software.

Faded prints
- Check the Strobe setting (this controls darkness or lightness of print density). If printing from *CD Painter*, check the Strobe setting on the host computer.
- Increase or raise Strobe Setting by 5 units and reprint

Horizontal Streaks or Arc shaped Streaks
- Lower or reduce Strobe Setting
- Re-arrange graphics to reduce large coverage areas
- Check the Strobe setting (this controls darkness or lightness of print density).

Sticking or Torn Ribbon
- Vertical Lines or streaks Printer makes snapping or popping sounds during printout
- Lower or reduce Strobe Setting
- Clean the Printhead

CD Positioning Errors

Reload CD on tray according to the loading instructions in the Printer Operation section of this manual.
- Make sure the CD centering pin is positioning the CD when the tray closes. The CD centering pin <u>should touch only the outside edge of the CD</u>. The CD should <u>not</u> rest on top of the CD centering pin.

CD Printing Techniques Section

The PowerPro CD Printer offers a convenient way to print labels on CDs, this section describes ways to get the best possible printouts within the printer's labeling capabilities.

Please see the following CD Printing Techniques Chart for more detailed information on CD Label printing techniques.

PowerPro II CD Media & Ribbon Selection Guide

For best results, use the CD Media and Ribbon Section Guide to choose the appropriate CD Media, Ribbon, and Printer Strobe setting for your CD labeling job.

	Label Project: • **Black Text & Graphics**	Label Project: • **Color Text & Graphics**	**Project Printing Tip**
Ribbon	Black or Monocolor Ribbon	Full Color Ribbon	PowerPro II requires thermal transfer type white coated discs with smooth coating for optimum color results.
CD Media	Silver or Gold Discs (lacquer finish)	White Discs (Smooth white coated finish)	White coated inkjet type discs (for inkjet CD printers) with a rough surface will not provide good output
Strobe Setting **Strobe setting controls darkness or lightness of print** To set strobe setting in Windows: select File / Print / Properties / Device Option	25	45 to 65	If label is too light try increasing the strobe setting in increments of 5 until label has best appearance If label is too dark light try decreasing the strobe setting in increments of 5 until label has best appearance
Label Graphics	Labels the print best in monocolor are: • Text only • Line art and Clip art • Mixed text and graphics • Mixed graphics • Photos with limited grayscale range	Labels the print best in color are: • Text only • Line art and Clip art • Mixed text and graphics • Mixed graphics • Photos with limited range of colors • Spot colors	Labels that may not print properly are: • Large single color areas • Reversed out graphics (example: clear text on solid black background) • Photos with wide range of colors

Graphics Tips

Label Graphics Tips	
Resolution	Set resolution of graphics files for 600 DPI (or 300 DPI) prior to saving graphics. If using Photo or Paint programs, save files as 300 or 600 DPI JPEG files, with images sized for placement on CD. Import graphic file to CD Painter. Set Printer Driver for 300 or 600 DPI mode accordingly prior to printing.
Web Graphics	Website graphics are typically 72DPI, which means they will shrink in size when brought over to a label file. If possible, avoid expanding size of graphics. Expanding to a larger size may result in "rough" looking graphics
Text Color	For color text, choose the 8 basic colors (bottom row of color selection within CD Painter—this will consistently give best results. If using Photo or Paint programs, set to CMY and select colors that utilize only one or two of the CMY colors.
Color Graphics	Most clip art in Windows Meta File format (WMF)provides good results

JPEG, BMP, and TIFF files may use dithering of CMY colors, you may need to use a Photo or Paint program to adjust color density to achieve best results.

Full disc single color graphics and reversed out graphics are not recommended for thermal transfer CD printers |
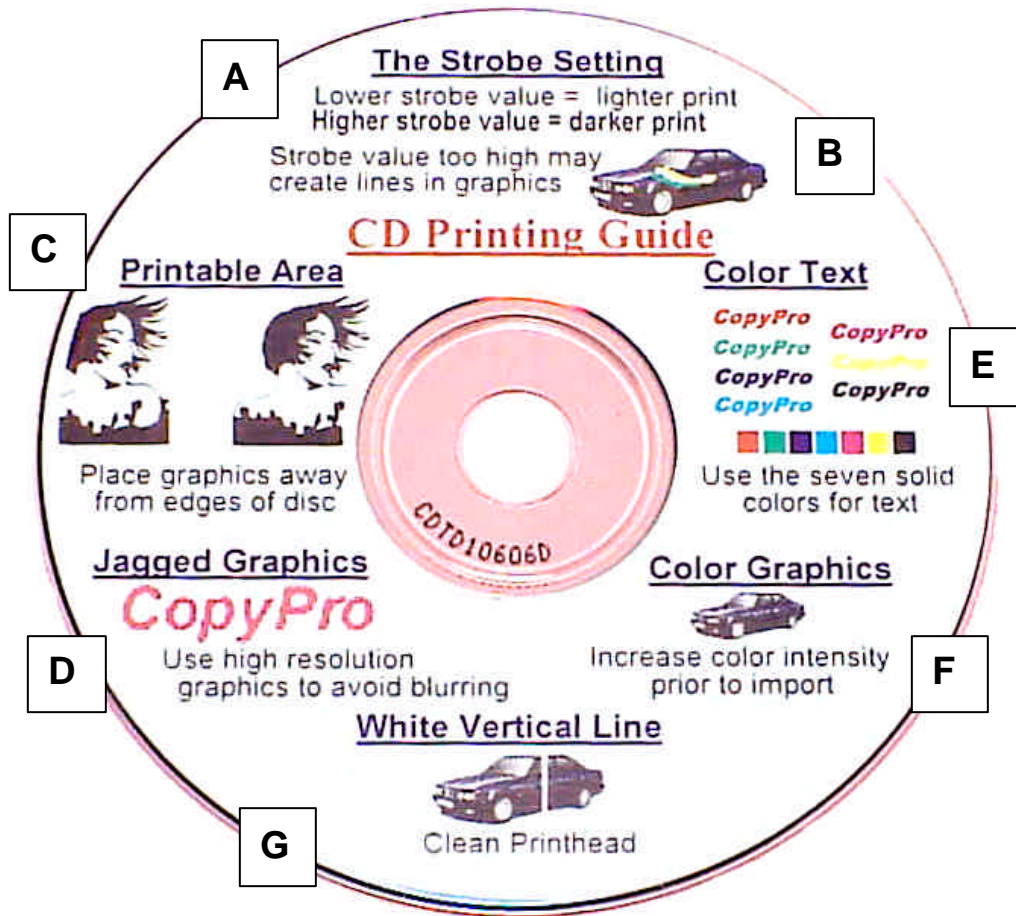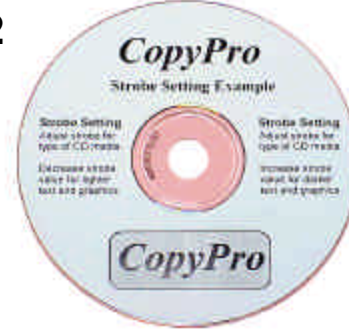
Common Label Issues
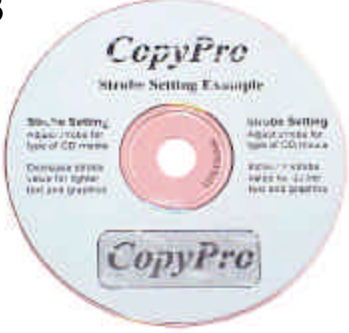
Figure 20:   CD Label Text and Graphics Examples
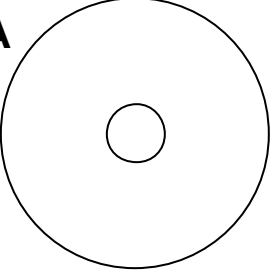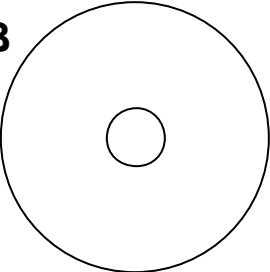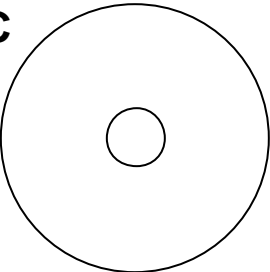
Area	Issue	Cause	Possible Correction
A	Label is too light or too dark	Strobe Setting is either to high or too low. The Strobe Setting controls printhead heat and print density.	If label is too dark decrease Strobe Setting. If label is too light increase Strobe Setting. Make changes in 5 unit increments.
B	Curved marks in graphic	Strobe Setting is too high. Overheated ribbon causing "wrinkle" marks in graphics.	Decrease strobe setting. If needed, clean print head.
C	Graphics or text are not printed near CD edge or hub	CD has unprintable areas near outer edge and inner hub, also check template size in CD label program	Template adjustment is made from CD Label program, see Settings Menu. Adjust label template to mask unprinted areas. Template mask creates uniform boarder for crisp presentation.

D	Jagged or rough looking graphics or text that has been imported from other program or WebPages	Low-resolution graphics appear jagged or rough. Graphics re-sized to larger size lose resolution.	Create graphics sized for label at 300 DPI, then import into CD Label program. WebPage graphics at 72 DPI will become "rough" if resized.
E	Text appears light or faded (text created in CD label program)	Text color not optimized for CD printer	From label program change text color to one of the seven solid colors. These colors are shown in Custom Colors area of Color Menu. See Optimizing Color Labels.
E	Text appears light or faded (text created in Photo or Paint program and imported to label program)	Text color not optimized for CD printer	From Paint or Photo program to increase color density of text prior to import to the label program. Also change CMYK values to minimize dithering. See Optimizing Color Labels.
F	Graphics appear light or incomplete	Some colors in graphic not optimized for CD printer	Use Paint or Photo program to increase color density of graphic prior to import to the label program
G	Vertical line across label	White vertical line through label indicates printed requires cleaning	Clean printhead, see Maintenance Section of User Manual. If cleaning does not correct issue printhead may be damaged.
NA	Unprinted area or marks on label	Possible finger print or dust disc interferes with printing	Avoid touching printable area of CD prior to printing

Strobe Setting Examples

Strobe Setting Examples	
1 Strobe setting is <u>too low</u> • Print is light or no print at all • Shaded graphics light or not printed	
2 Strobe setting is <u>correct</u> • Text and graphics are clear • Shaded graphics are clear	
3 Strobe setting is too high Case 1 - strobe is set a <u>little too high</u> • Print and graphics too dark Case 2 - strobe is <u>much too high</u> • Print and graphics very uneven • Ribbon is tearing	

CD Media & Strobe Setting examples

Recommended CD media, ribbon type and strobe setting	
A <u>Sliver</u> **CD discs** **(also called lacquer finish disc)** Recommendations: • Use with black ribbon • Strobe setting: **25**	**A**
B <u>White Coated</u> **CD discs** **(with <u>smooth</u> surface)** Recommendations: • Use with black ribbon • Strobe setting: **25** • Use with color ribbon • Strobe setting: **45**	**B**
C <u>White Coated</u> **CD discs** **(with <u>rough</u> surface for use with inkjet type CD printer)** Recommendations: • <u>Not recommended</u>, light poor quality output will result • Disc's rough surface does not accept label ink properly	**C**

Printer Driver Settings: Win 98

The key printer driver settings for the PowerPro CD printer are:

- **Strobe Setting** (controls lightness and darkness of label)

- **Color or Black Ribbon** selection (this setting is needs to match the type for ribbon (black or color) ribbon installed in the printer)
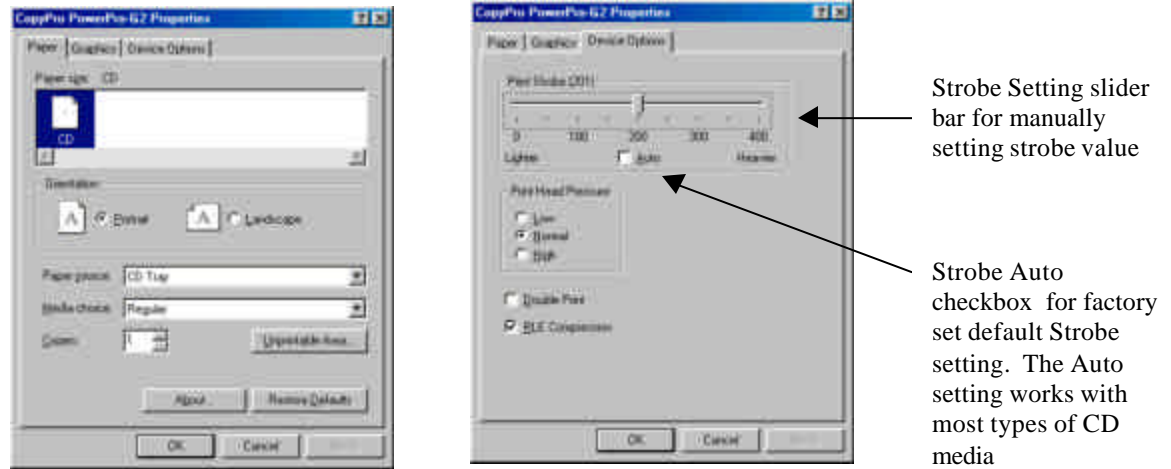
Strobe Setting

Strobe Setting slider bar for manually setting strobe value

Strobe Auto checkbox for factory set default Strobe setting. The Auto setting works with most types of CD media

Figure 21: Win 98 Print Driver Properties Window

Strobe Setting Adjustment

To adjust Printer Driver settings from Windows 98:

- From Windows Desktop, Click on: *Start Icon*

- Select *Settings*, Click on *Printers*

- *Right Click* on *PowerPro II Icon*,

- Double click *Properties*, Follow *Prompts*

- Click *Device Options Tab,* then check for Print Strobe setting

- Strobe value may beset by clicking the Auto check box (recommended) or manually by slider bar selection (for fine tuning the darkness or lightness of print)

- For Auto setting: use Auto Checkbox to set Strobe to Auto. When checked printer will use factory default settings, that should work with most standard CD discs. While the value of the Auto Setting is not shown, typically for black ribbon it is 15 and for a color ribbon is 15.

- For manually setting the Strobe Setting, use the Slider Bar to adjust strobe over a range of values. In general, the higher strobe setting, results in darker labeling.

  - If label is too dark reduce strobe setting by 5 units and re-print, repeat this process until proper print out is obtained

- If label is too light increase strobe setting by 5 units and re-print, repeat this process until proper print out occurs. Please note: if strobe setting is in above the 15 unit range or higher and print is light, first try a lower strobe setting in the 15 unit range and increase the strobe. In some cases a very high strobe setting will result in too light a print, and increasing the strobe setting further may cause the ribbon to melt or tear when printing, which may then require cleaning the print head (see Maintenance Section for print head cleaning information).

Black & White, or Color printing settings for Win 98

Black & White for black ribbon

Color for color ribbon

Color or Black Ribbon selection procedure:

- While in the Printer Driver Properties box
- Click *Graphics Tab*
- Note: recommended **Dithering** setting is the **Course** selection
- Click the *Color button*
- Select following:
- If black ribbon is installed in printer select: **Black and White only**
- If color ribbon is installed in printer select: **Color without image matching**

Printer Driver Settings: Win 2000

Strobe and Ribbon Color Settings

The key printer driver settings for the PowerPro CD printer are:

- **Strobe Setting** (controls lightness and darkness of label)

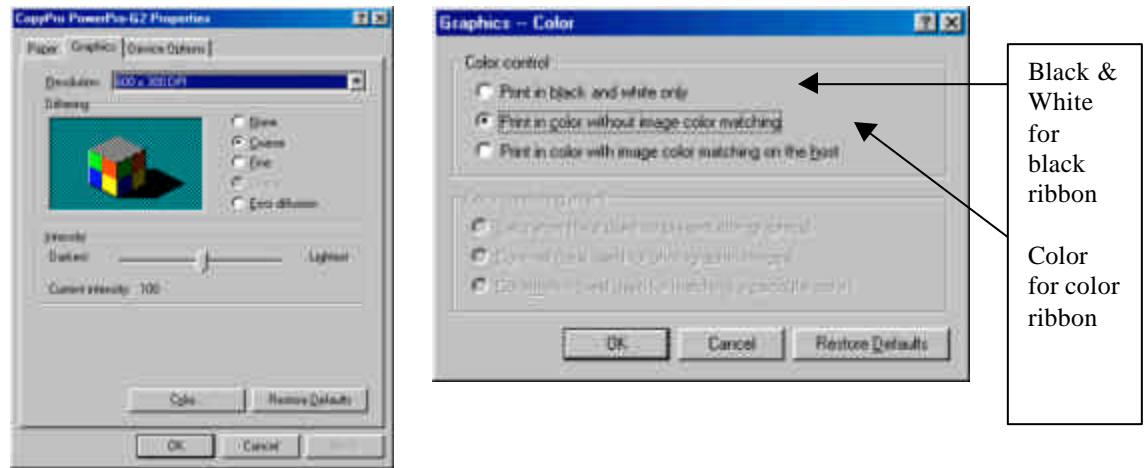- **Color or Black Ribbon** selection (this setting is needs to match the type for ribbon (black or color) ribbon installed in the printer)
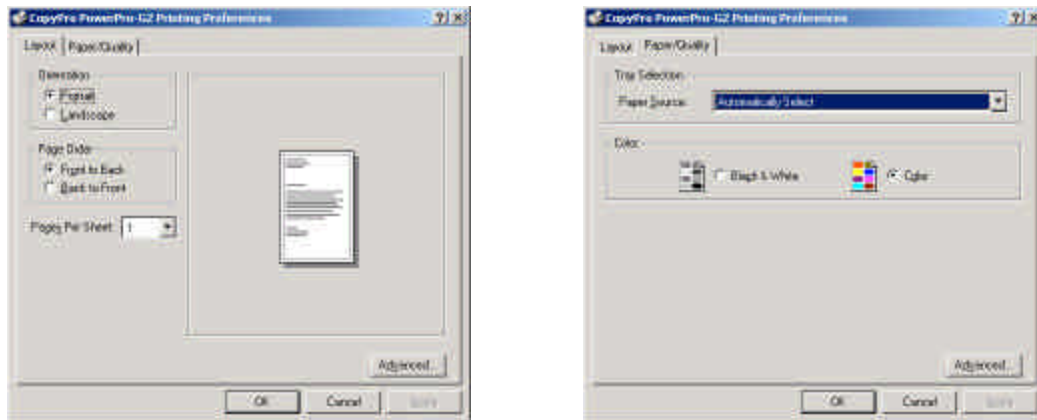
To adjust Printer Driver settings from Windows 2000:

- From Windows Desktop, Click on: *Start Icon*

- Select *Settings*, Click on *Printers*

- *Right Click* on *PowerPro II Icon*,

- Click *Printing Preferences*, Follow *Prompts*

- Click *Paper Quality Tab*

Ribbon Color Settings

- Select *Black and White* or *Color* setting to match type of ribbon installed in printer

- Click *Advanced Button,* the *Advanced Options box* will display

Strobe setting adjustment
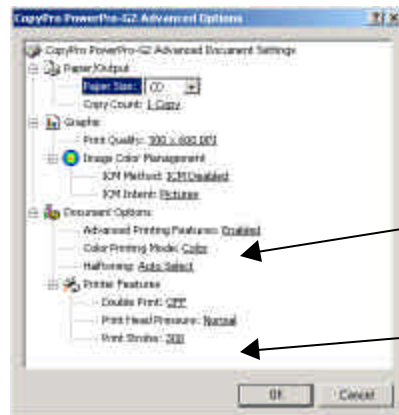
Ribbon Color Setting, this should match type of ribbon installed in printer

Strobe Setting, the higher the value the increases darkness of label

- From the *Printing Preferences* Window

- Click on Print Strobe number box

- Strobe value maybe set by clicking the Auto check box (recommended) or manually by slider bar selection (for fine tuning the darkness or lightness of print)

- For Auto setting: use Auto Checkbox to set Strobe to Auto. When checked printer will use factory default settings, that should work with most standard CD discs. While the value of the Auto Setting is not shown, typically for black ribbon it is 15 and for a color ribbon is 15.

- For manually setting the Strobe Setting, use the Slider Bar to adjust strobe over a range of values. In general, the higher strobe setting, results in darker labeling.

- If label is too dark reduce strobe setting by 5 units and re-print, repeat this process until proper print out is obtained

- If label is too light increase strobe setting by 5 units and re-print, repeat this process until proper print out occurs. Please note: if strobe setting is above the 15 unit range or higher and print is light, first try a lower strobe setting in the 15 unit range and increase the strobe. In some cases a very high strobe setting will result in a uneven light a print, and increasing the strobe setting further may cause the ribbon to melt or tear when printing. If this occurs, Click OK, then Click OK

- Close Printers Window to exit

- Print Strobe setting and ribbon setting (color or black) are now set

- Strobe value maybe set by clicking the Auto check box (recommended) or manually by slider bar selection (for fine tuning the darkness or lightness of print)

- For Auto setting: use Auto Checkbox to set Strobe to Auto. When checked printer will use factory default settings, that should work with most standard CD discs.

While the value of the Auto Setting is not shown, typically for black ribbon it is 15 and for a color ribbon is 15.

- For manually setting the Strobe Setting, use the Slider Bar to adjust strobe over a range of values. In general, the higher strobe setting, results in darker labeling.

- If label is too dark reduce strobe setting by 5 units and re-print, repeat this process until proper print out is obtained

- If label is too light increase strobe setting by 5 units and re-print, repeat this process until proper print out occurs. Please note: if strobe setting is above the 15 unit range or higher and print is light, first try a lower strobe setting in the 15 unit range and increase the strobe. In some cases a very high strobe setting will result in a uneven light a print, and increasing the strobe setting further may cause the ribbon to melt or tear when printing. If this occurs, reduce the strobe setting, and check printout, if print out is fuzzy cleaning the print head may be required (see Maintenance Section for print head cleaning information).

Optimizing Color Labels

Optimizing Color Labels

For full color printing, the PowerPro CD Printer uses a paneled ribbon that includes a Cyan (blue), Magenta (Red), and Yellow panels, commonly referred to as CMY colors. The printer mixes (by dithering) these colors to create the colors on the label. Mixing the CMY panels creates a range of colors. For example, green would be a mix of blue and yellow, and black a mix of all three panels. Due to the limitations of dithering some color combinations appear more intense that others.

There are seven standard colors that provide good color intensity for text and graphics. These colors are shown in the first row of the Custom Colors of the Color Selection Menu in the CD Label program. These colors are red, green, blue, light blue, purple, yellow, and black.

For best color output:
Use the Seven standard colors shown in the Custom Colors box. (Note: white is not printed)
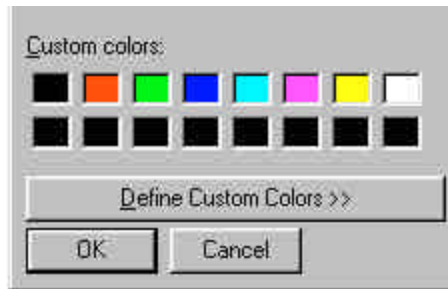
Recommendation for optimum text and graphics: Use the seven standard colors for text color or graphic shape color for boxes, circles, lines, and color filled shapes. These colors selected from within the CD Label program.

In addition to the standard colors, are the basic colors, which provide more color choices, but may appear to print lighter than they appear on-screen.

Additional colors

Seven basic colors
(Note: white is not
printed)
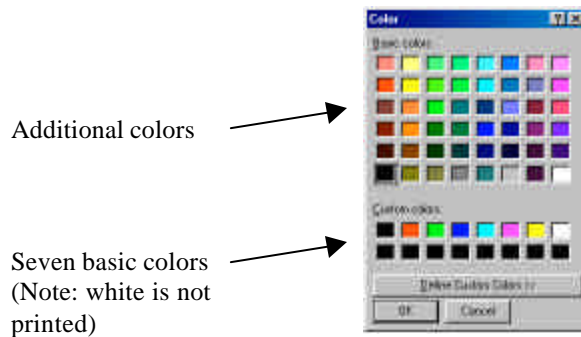
Preparing Color Graphics for import into the CD Label Program

The CD Label Program allows import of several standard graphics files, including versions of BMP, JPG. And TIF file formats. The PowerPro II prints at 300 and 600 DPI modes, so graphics should be set for 300 DPI resolution and properly sized for the disc label. Typically, in Paint and Photo editing programs there are features that allow setting resolution and imaging size. Having the correct size and resolution eliminates the need to "re-size" the image in the CD Label software. Small images or low resolution images may need to be stretched to a larger size, however this may cause the graphic to appear to have a "rough" or "jagged edged" appearance.

Recommendation for preparing graphics for labels:

* Set graphic image resolution to 300 DPI when preparing graphic in Photo or Paint programs

* Make text or graphic the correct size for the CD label

* If possible, avoid re-sizing graphic in CD Label program

* Importing a webpage graphics: on-screen webpage graphics are typically set for 72 DPI (low resolution) and will appear to "shrink" in size when imported into the CD Label program which is displaying the graphic at 300 DPI. Re-sizing this type of graphic to a larger size may cause the graphic to become fuzzy or have jagged edges.

Advanced recommendations:

* In Photo and Paint programs, if possible select colors that mix only two of the three CMY colors to minimize dithering

* In Photo and Paint programs, adjust contrast and brightness settings to make "brighter" and denser images

- In Photo and Paint programs, use the color saturation adjustment (Ex. color curves) to increase color density of graphic
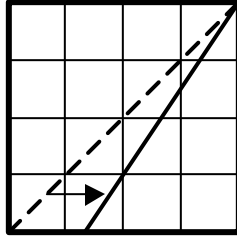
Figure 22:   For graphics created in Photo and Paint programs, adjust the color curves to increase color density of graphic for best color output

CD Printing Techniques Chart

Use this chart with example CD Label example (Figure 18) shown on page 39 for recommendations on printing issues. The CD Label example includes several label graphics items representing typical disc label components. These label components are marked as areas A, B, C D, E, F and G on the CD Label example.

Area	Issue	Reason	Suggestion	Additional tips
A	With black ribbon: Text created in the CD Painter program does not print clearly	Check Strobe setting. Setting of too high or too low will effect text quality. If strobe is too high you may have a ribbon tear or hear a "crackle" sound while printing, indicating ribbon is overheated.	Try a Strobe setting of 15 and increase strobe value in increments of 5 until you have good results.	CD media may not be suitable for thermal transfer labeling. Try different brand of CD media.
B	Graphics and Text have light horizontal lines	Check strobe setting. See above. Strobe setting is too high, causing ribbon to wrinkle		

CD Printing Techniques Chart, continued.

Use this chart with example CD Label example (Figure 18) shown on page 39 for recommendations on printing issues. The CD Label example includes several label graphics items representing typical disc label components. These label components are marked as areas A, B, C D, E, F and G on the CD Label example.

Area	Issue	Reason	Suggestion	Additional tips
C	Text or Graphic fades at outer edge of disc or near hub ring area	Printer can not print to outer edge of disc or near hub ring area	1. Move text or Graphic away from edge or hub area	
		Some CD-R discs are not perfectly flat and have raised areas near hub ring area and on the outer edges of the disc. The raised areas lifts the printhead away from the disc causing print to fade	2. Adjust Disc Template. See Settings Menu in CD Painter, select Template. Adjust	
			3. Change to white coated CD media for better results	White coated media provides flatter / smoother printing surface compared to some types of silver CD media
	Text or graphics at top or bottom of disc is not printing or is cutoff	Print may not print completely to edge disc	See above.	
D	Web page graphics copied to a disc label have a "rough" or "jagged" quality	Web page graphics are usually set at 72 DPI, which will cause them to appear very small when imported into CD Painter label program	Do not enlarge or stretch web graphics. Enlarging reduce quality of the graphics	Tip: Some graphics files (WMF files: Windows Meta Format) can be enlarged without reduction in quality

CopyPro PowerPro II

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CD Printing Techniques Chart, continued.

Use this chart with example CD Label example (Figure 18) shown on page 39 for recommendations on printing issues. The CD Label example includes several label graphics items representing typical disc label components. These label components are marked as areas A, B, C D, E, F and G on the CD Label example.

D	Printed graphics look "rough" or "jagged" as compared to what is shown on-screen	The Graphics may have been created or saved at a low resolution, then placed in the label. Low resolution graphics may have been "expanded" or "stretched" to larger size Low resolution graphics (72 DPI) appear	Use high resolution graphics for best looking 300DPI or 600DPI printout Create and Save all Graphics at least 300DPI or higher. Note: Graphics that are created and saved at a low resolution can not convert back to higher resolution.	When creating graphics, create graphics close to size used on CD label. In your graphics program, et resolution to 300 DPI and use rulers to check size. This will eliminate the need to expand" or "stretch" graphics which may reduce the quality of the graphic object

CD Printing Techniques Chart, continued.

Use this chart with example CD Label example (Figure 18) shown on page 39 for recommendations on printing issues. The CD Label example includes several label graphics items representing typical disc label components. These label components are marked as areas A, B, C D, E, F and G on the CD Label example.

E	With color ribbon: Text created in the CD Painter program does not print clearly	For best text quality use the one of the printer's seven primary colors as a text color. Also, check strobe setting. See above.		
F	With color ribbon: Text created in a 3rd party graphics program does not print clearly	The text may be a bitmap or JPEG graphics, with a color that does not print well.	Adjust to color of the text to more closely match the printer's seven primary colors	Tip: If adjusting colors does not provide good results. Use the CD Painter software to create the text or text and background.
F	Graphics objects appear washed out or are not completely printing	Check strobe setting. See above. IF Strobe setting OK, graphic may be too light.	Adjust graphics in photo or paint program by increasing darkness or density in 10% increments and if needed reduce contrast by 10%.	CD media may not be suitable for thermal transfer labeling. Try different brand of CD media.

CD Printing Techniques Chart, continued.

Use this chart with example CD Label example (Figure 18) shown on page 39 for recommendations on printing issues. The CD Label example includes several label graphics items representing typical disc label components. These label components are marked as areas A, B, C D, E, F and G on the CD Label example.

G	Vertical "White" line or non printing line" is across disc label	Printhead has a particle of ribbon or dust stuck to it. It is possible that printhead is damaged and needs replacement. If cleaning printhead does not correct problem. Contact CopyPro Service department for replacement printhead.	Clean printhead	Tip: If strobe setting is too high, this may cause ribbon to melt and ribbon particle stick to printhead. After cleaning printhead, set strobe setting to 15 increase in strobe value increments of 5 until you have good results.
G	One half of the label is not printed on all discs	Print head may need servicing, please contact your reseller or CopyPro service department		Tip: Save a copy of the labeled CD and label file to allow quick problem solving
G	Dot or spec on disc label	Dust particles on ribbon cause spots on disc label	Check printer for dust. Use printer in less dusty area. Operate printer with top cover on.	Take care not to touch printhead when inspecting for dust.

Thermal Transfer & Inkjet CD Printer Comparison

The PowerPro II series of printers use thermal transfer technology to apply resin type ink to the surface of a plastic CD or DVD disc. Thermal transfer printers have a print head that heats portions of a ribbon as disc moves under the printer head, as the disc goes pass the print head the resin type ink cools and adheres to the surface of the disc. Thermal Transfer CD printers provide one of the few methods to print on CD discs in an office environment.

CD Printer Comparison Chart

	Inkjet CD Printer	Thermal Transfer CD printer	Key Point
Fast Print speed	Slow	Fast	Thermal Printer is faster
Waterproof Label	Not waterproof	Waterproof	Thermal Printer label more durable
Requires coated CD media	Yes	No – prints black directly on Silver or gold media Yes – prints color on white coated media	Thermal Printer has slowest cost per label for black only labels and media
Quality of output	Good Text Excellent Graphics	Excellent Text Good Graphics	Thermal transfer Printer offer good labeling characteristics
Coverage of Disc	Can cover entire disc with graphics	Can cover most of the disc with graphics. Some unprintable areas at edges of disc and hub area	Thermal transfer Printer label coverage good for most business CD labeling applications
Best labeling applications	Color photos on white inkjet type coated media	Black text and graphics on silver / gold media Spot color on silver	Thermal transfer Printer allows wide range of label types

		on white coated media	
		Mixed text and color graphic on white coated media	
Not recommend labeling applications	Permanent Labeling of disc Disc that will handled in wet or humid conditions (ink will smear)	Full color photos or graphics covering the entire label area of the disc	Thermal Transfer Printer full coverage labels possible but not recommended

Supported Ribbon and Ribbon Specifications

The CopyPro PowerPro II supports the following thermal transfer ribbons.

Vendor	*Ribbon Type*	*Spindle Width*	*Labels per ribbon*
CopyPro	Black	130MM	• 2361 full CD labels • 4,000 to 6,000 partial CD labels • Over 6,000 labels if label is consists of single line of text
Rimage	Full Color	122MM	• 500 labels full CD

Ribbon Usage with a Minimum Print Size

The amount of ribbon used will vary depending on the particular print, and the amount of CD surface the print is intended to cover. A minimum print (ex. line of text) is one that uses the smallest amount of ribbon. The Take-up Roller typically winds 7/8" to 9/8" of ribbon with a minimum print.

Autoloader Port

Connector and Signal information

Pin Number	Signal Name	I/0	Function	Logic 1 (5 Volts)	Logic 0
1	CPBSY	Output	Printer Busy	Printer Busy	Printer Available
2	CTOUT	Output	Tray Out	Tray Extended	Tray Retracted
3	CTIN	Output	Tray In	Tray Retracted	Tray Extended
4	CCDINTRAY	Output	CD on Tray	CD Present	No CD Present
5	P_CCMD	Input	Print Buffer Command	No Action	Prints label image in buffer
6	O_CCMD	Input	Move Tray Command	No Action	Toggles tray In or Out
7	CPERR	Output	Printer Error	Error Exists	No Error
8	CRIBOUT	Output	Ribbon Out	No Ribbon Detected	Ribbon Detected
9	Ground		Ground	N/A	N/A

Note:
- P_CCMD and O_CCMD must receive a logic low pulse of at least 70ms for the command to be valid.
- CopyPro Autoloaders send valid P_CCMD and O_CCMD pulses of 800ms.
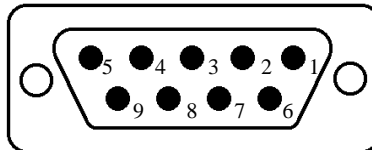
Autoloader Port Pinouts:

Figure 23:   DB-9 Female type connector on printer

Error Codes for Status LED

The Status LED is located on the front of the printer.

Number of Flashes	Area to check	Action
1	Timeout	Power OFF / Power ON printer
2	Ribbon out	Install new ribbon, press START
3	No CD	No CD in tray. Place CD in Tray, press START to continue.
4	Tray error	Press START to home tray
5	Head motor error	Power OFF / Power ON printer
6	Memory error	Memory error detected. Power OFF / Power ON printer
7	Print buffer overflow	Press START key (also check label size, use RLL setting in driver to reduce label)
8	Positioning	Power OFF / Power ON printer
9	Data error	Check driver color setting matches type of ribbon installed in printer. Power OFF / Power ON printer