SHARP®

AR-C200P

User's Guide

Windows®

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Notes, Cautions and Warnings

NOTE

A note appears in this manual like this. A note provides additional information to supplement the main text.

CAUTION!

A caution appears in this manual like this. A caution provides additional information which, if ignored, may result in equipment malfunction or damage.

WARNING!

A warning appears in this manual like this. A warning provides additional information which, if ignored, may result in a risk of personal injury.

Important!

An Important box appears in the manual like this. An important box provides information which can impact the usability of that particular printer function.

Contents

Introduction 9
Features. 9
How To Use This Manual 10
Getting Started 12
Unpacking. 12
CD Contents 13
Printer Location 13
Printer Components 14
Setting up 17
Packaging and Protective Sheet Removal 17
Toner Cartridge Installation 21
Loading Paper 25
Manual Feed 29
Power Connection 30
Control Panel 31
Menu Settings 33
Media Recommendations 38
Paper Feed and Exit 40
Printer Settings 42
List of User Menu Settings 43
List of Administrator Menu Settings 67
Setting Color Tuning from the Front Panel 70
Switching Off 73
Interfaces 74
Windows XP 76
Printer Drivers 76
Which Printer Driver to Use? 76
Enabling Installed Options in the Driver 77
Changing Defaults for Paper Feed, Size and Media in the Driver . . .84
Operation 92
Factors That Affect Color Printing 93
Choosing a Color Matching Method 96
Color Matching: PCL Driver 99
Color Matching: PostScript driver 102
Using the ICC Profiles Feature:
PostScript Driver Only 106
Windows ICM Color Matching 109
Printing Multiple Pages on One Sheet
(N-up Printing) 110

Printing Custom Page Sizes 112
Changing the Resolution for a Print Job 118
Duplex Printing
(Printing on Both Sides of the Paper). 119
Printing Booklets 122
Printing Watermarks: PCL Driver Only 125
Collating 127
Proof and Print 128
Secure Printing
(Printing Confidential Documents) 131
Store to Hard Disk 134
Printing Posters: PCL Driver Only 137

Windows 2000. 139

Printer Drivers 139
Which Printer Driver to Use?. 139
Enabling Installed Options in the Drivers 140
Changing Defaults for Paper Feed, Size and Media in the Driver . . 147

Operation 152
Factors That Affect Color Printing 153
Choosing a Color Matching Method 156
Color Matching: PCL Driver 159
Color Matching: PostScript Driver 162
Using the ICC Profiles Feature:
PostScript Driver Only 166
Windows ICM Color Matching 169
PrintingMultiple Pages on One Sheet
(N-up Printing) 170
Printing Custom Page Sizes 172
Changing the Resolution for a Print Job 177
Duplex Printing
(Printing on Both Sides of the Paper). 178
Printing Booklets 181
Printing Watermarks: PCL Driver Only 184
Collating 186
Proof and Print 187
Secure Printing
(Printing Confidential Documents) 190
Store to Hard Disk 193
Printing Posters: PCL Driver Only 196

Windows Me/98/95. 197
Printer Drivers 197
Which Printer Driver to Use? 197
Enabling Installed Options in the Drivers 198
Changing Defaults for Paper Feed, Size and Media in the Driver . . 203
Operation 206
Factors That Affect Color Printing 207
Choosing a Color Matching Method 210
Color Matching: PCL Driver 213
Color Matching: PostScript Driver 216
Windows ICM Color Matching 222
Using ICC Profiles Feature 223
Printing Multiple Pages on One Sheet
(N-up Printing) 224
Printing Custom Page Sizes 226
Changing the Resolution for A Print Job 230
Duplex Printing
(Printing on Both Sides of the Paper). 231
Printing Booklets:
PCL Only, Windows Me Only 233
Printing Watermarks 235
Collating 239
Font Substitution: PostScript Only 240
Proof and Print 241
Secure Printing
(Printing Confidential Documents) 245
Store to Hard Disk 248
Printing Posters: PCL Only 251
Windows NT 4.0. 253
Printer Drivers 253
Which Printer Driver to Use? 253
Enabling Installed Options in the Drivers 254
Changing Defaults for Paper Feed, Size and Media in the Driver . . 261
Operation 269
Factors That Affect Color Printing 270
Choosing a Color Matching Method 273
Color Matching: PCL Driver 275
Color Matching: PostScript Driver 278
Printing Multiple Pages on One Sheet
(N-up Printing) 282
Printing Custom Page Sizes 284
Changing the Resolution for A Print Job 290

Duplex Printing
(Printing on Both Sides of the Paper) 291
Printing Booklets: PCL Driver Only 294
Printing Watermarks: PCL Driver Only 296
Collating 298
Proof and Print 299
Secure Printing
(Printing Confidential Documents) 302
Store to Hard Disk 305
Printing Posters: PCL Driver Only 308

Troubleshooting 309
LCD Messages 309
Paper Jams 313
Parallel Transmission Mode 320
Problem Solving 321

Maintenance 330
Adding Paper 330
Changing the Toner Cartridge 333
Changing the Image Drum 339
Changing the Transfer Belt 342
Changing the Fuser Unit 346
Cleaning the LED Heads 349
Transporting the Printer 351

Accessories 353
Internal Hard Disk Drive 353
Duplex Unit 355
Additional Paper Trays 356
Additional Memory 358

Specifications 361

Consumables 364
Toner 364
Drums 364
Fuser Unit 365
Transfer Belt 365

Factory Default Settings 366
Print Menu 366
Media Menu 367
Color Menu 368
System Config Menu 369
PCL Emulation Menu (Windows Only) 369
PPR Emulation Menu (Windows Only) 370

FX Emulation Menu (Windows Only) 370
Parallel Menu (Windows Only) 371
USB Menu 371
Network Menu 371
Memory Menu 372
Disk Maintenance Menu. 372
System Adjust Menu 372
Maintenance Menu 373
Software Utilities. 374
Overview 374
Color Swatch Utility 375
PDF Direct Print Utility 378
PrintSuperVision 380
Network Printer Status Utility 382
Sharp LPR Utility 385
Index. 386

Introduction

Congratulations on purchasing this color printer!

Features

Resolution	600 x 1200 dpi
Print Speed	*Color:* 20 ppm *B&W:* 24 ppm
Network Card	Standard
Duplex Unit	Optional[a] (see page 355)
Memory	64 MB
Hard Disk Drive	Optional (see page 353)

a. Requires additional memory (see page 358)

- Single pass digital technology for high quality, speed and reliability.
- Versatile paper handling:
  – Standard 530-sheet paper tray
  – Standard 100-sheet multi purpose tray for card stock, envelopes, labels, etc.
  – Optional 530-sheet paper trays providing up to a maximum of 1690-sheet capacity
- Flexible interfaces with automatic switching:
  – USB
  – High-speed, bi-directional parallel (IEEE-1284)
  – Industry standard network connectivity via internal network interface card
- Environmentally friendly: the advanced power save mode minimizes power consumption and the separate toner and drum design cuts down on waste.
- Automatic color balance adjustment: in order to ensure consistent output at all times, the machine automatically performs a color check when the machine is switched on, when the top cover is

opened and then closed, and adjusts the color balance automatically. It can even be set to adjust the color balance during long print runs.

- Auto media detect: detects the weight of the media being fed through the printer then automatically adjusts the fusing temperature, speed (if necessary) and transfer voltage to ensure correct fusing and print quality.
- Optional duplex printing for fast two-sided output.
- Optional high capacity 10Gb hard disk drive.

How To Use This Manual

This manual will lead you logically through the unpacking, setup and operation of your printer to help you to make the best use of its many advanced features.

It also includes:

- troubleshooting information
- maintenance guidelines
- instructions for adding optional accessories as your needs evolve

NOTES

This User's Guide has been written using one printer as a model, and the illustrations/screenshots reflect this.

The information in this manual is supplemented by the extensive online help facility associated with the printer driver software.

Online Usage

This manual is intended to be read on screen using Adobe Acrobat Reader. Use the navigation and viewing tools provided in Acrobat.

You can access specific information in two ways:

- In the list of bookmarks down the left hand side of your screen, click the topic of interest to jump to the required topic. (If the bookmarks are not available, use the Table of Contents.)

- In the list of bookmarks click Index to jump to the Index. Find the term of interest and click the associated page number to jump to the page containing the subject.

Printing Pages

The whole book, Individual pages, or sections may be printed. The procedure for printing from Acrobat Reader is:

1. From the toolbar, select **File**, then **Print**.
2. Choose which pages you wish to print:
   a. **All pages** for the entire manual.
   b. **Current page** for the page at which you are looking.
   c. **Pages from** and **to** for the range of pages you specify by entering their page numbers.
3. Click **OK**.

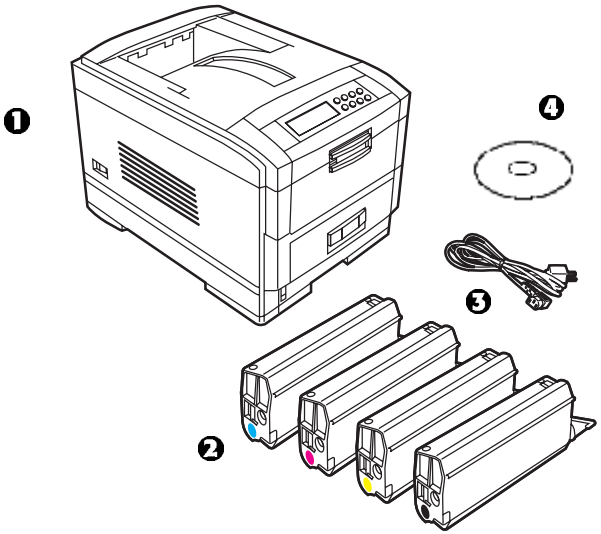
Getting Started

Unpacking

WARNING

This printer weighs of 106 lbs. (48 kg). 2 people are required to lift the printer safely.

After unpacking the printer and choosing a suitable place to put it, check that all the necessary parts are available to continue.



1. The printer.
2. 4 toner cartridges (cyan, magenta, yellow and black).
3. Power cable.
4. CD.
5. LED lens cleaner (not illustrated).
6. Light-proof plastic bags (not illustrated).
7. Documentation (not illustrated): Setup Guide, Software Installation Guide, Warranty booklet.

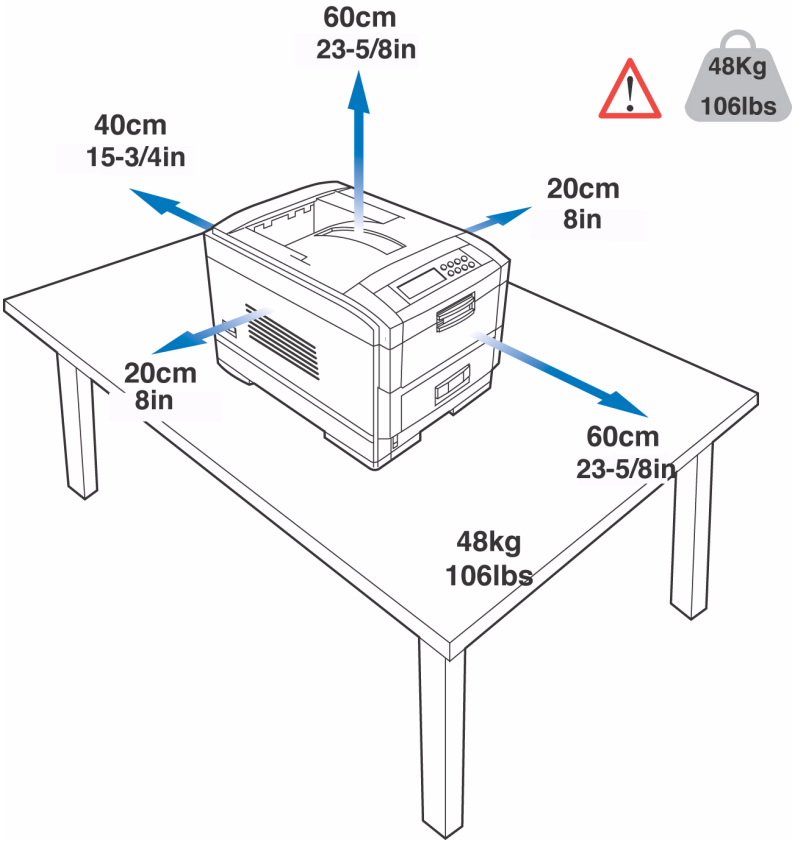
Retain all packing materials to faciliate transport.

CD Contents

The CD supplied with your printer contains the drivers, software utilities and on-line manuals.

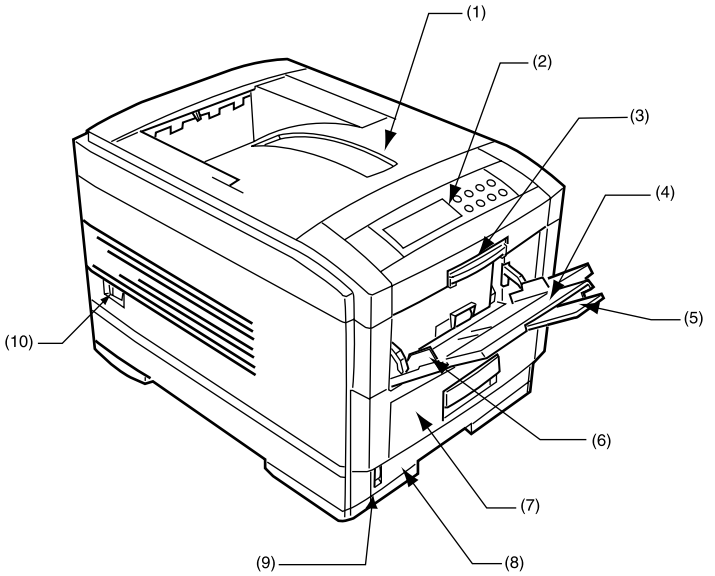
Printer Location

Place the printer on a flat surface large enough and strong enough to accept the size and weight of the printer. There must be sufficient space around the printer to allow for access and printer maintenance.



Printer Components

1. Top cover
2. Control panel
3. Top cover release catch
4. Multi purpose tray (manual feed)
5. Paper support extension

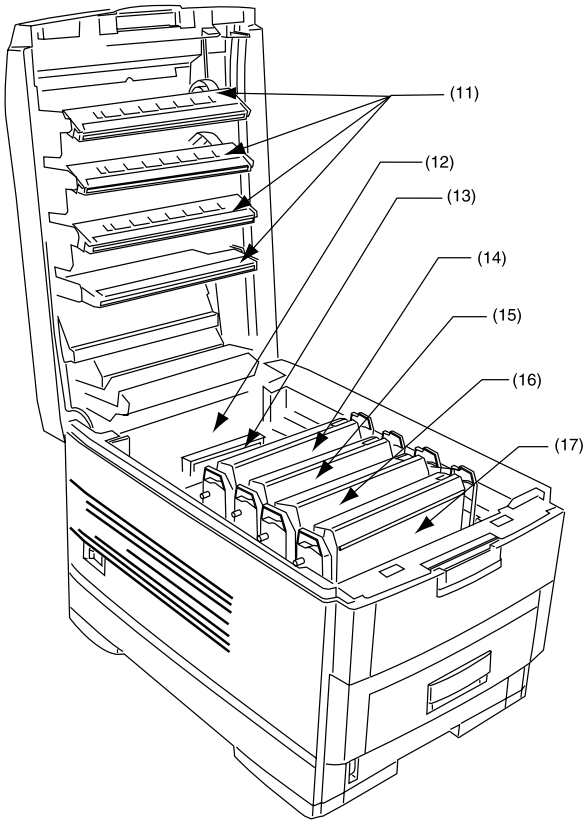


6. Paper guides
7. Front cover
8. Paper tray
9. Paper level indicator
10. Power switch

11.LED heads (4)

12. Discharge roller

13. Fuser unit



14. Image drum and toner cartridge (cyan)

15. Image drum and toner cartridge (magenta)

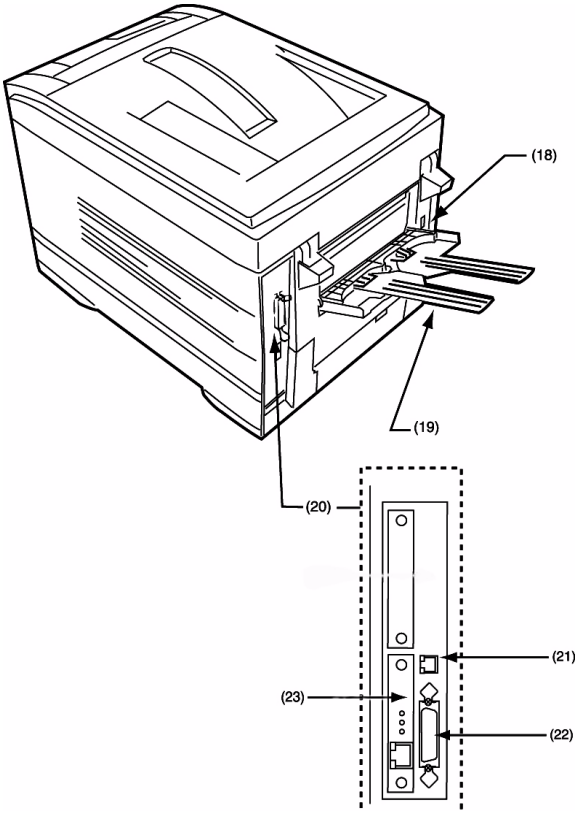
16. Image drum and toner cartridge (yellow)

17. Image drum and toner cartridge (black)

18. Power connector

19. Rear exit paper tray

20. Interfaces and option card slott



21.USB interface connector

22. Parallel interface connector

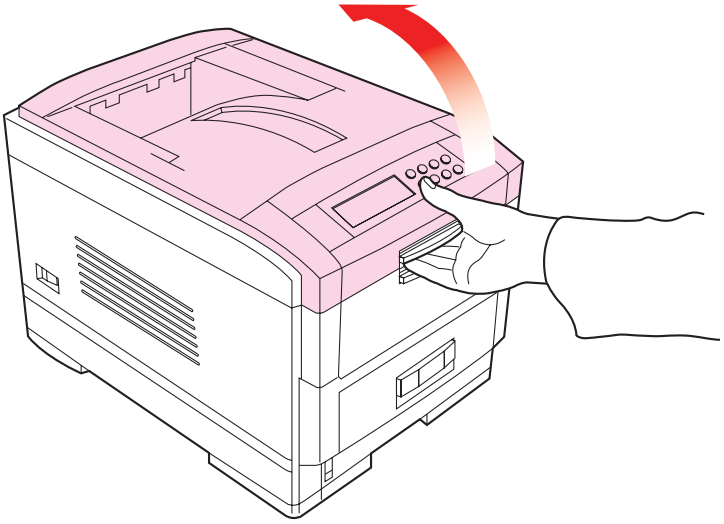
23. Network interface card

Setting up

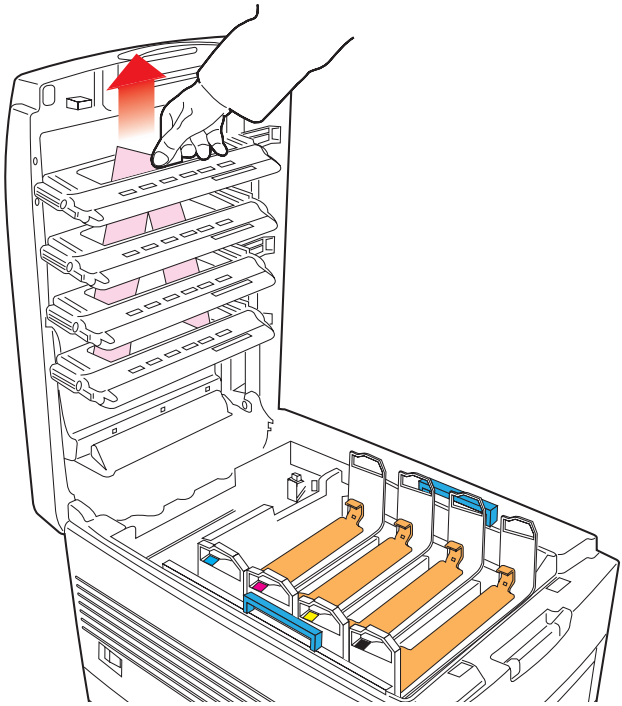
Before connecting this printer to a computer and power supply, the toner cartridges must be installed and paper inserted in the paper tray.

Packaging and Protective Sheet Removal

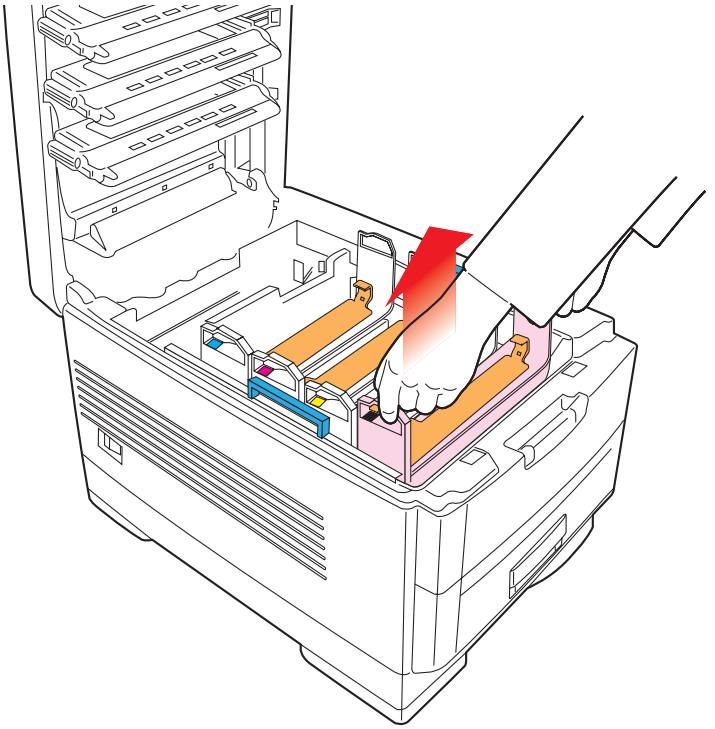
1. Remove any adhesive tape and packaging from the printer.
2. Using the release handle, open the top cover.



3. Remove the LED head restrainer from behind the LED heads in the top cover.



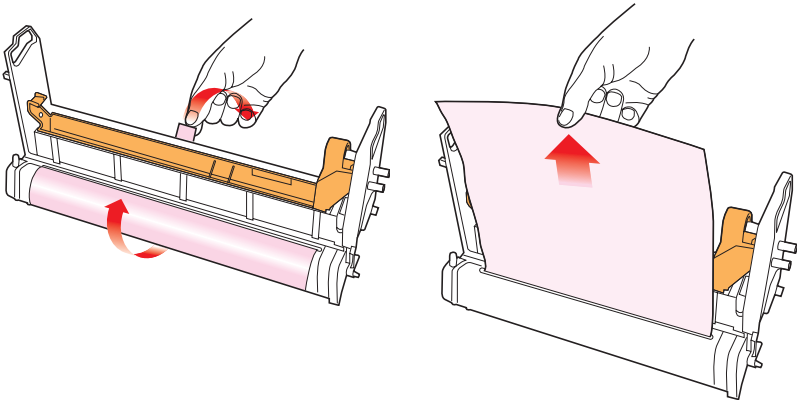
4. Remove the four image drums and place them on a level surface.



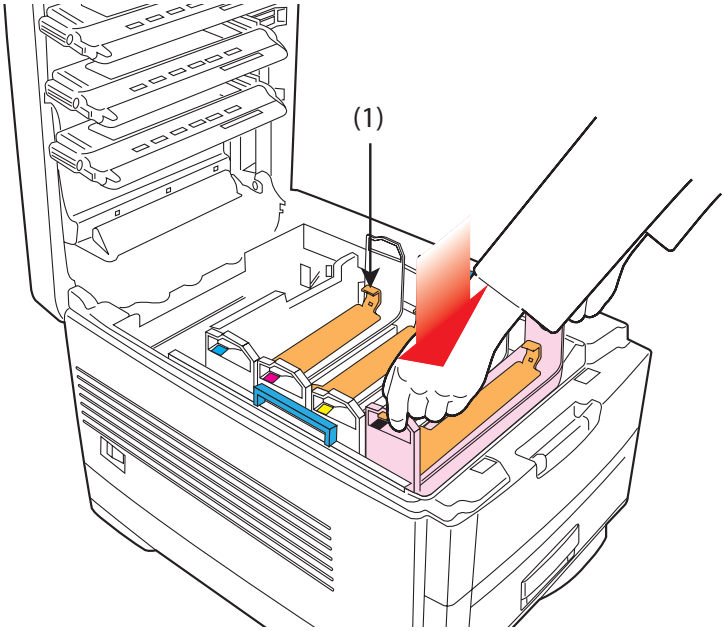
CAUTION!

- **Never expose image drums to light for more than 5 minutes.**
- **Always hold image drum by the ends.**
- **Never expose image drums to direct sunlight.**
- **Never touch the green surface of the drum.**

5. Remove the protective sheets from each of the four image drums.



6. Replace the four image drums into the printer making sure each image drum is installed in its correct color location.



7. Push the tab (1) inwards and remove the blanking plate from each of the image drums.

Toner Cartridge Installation

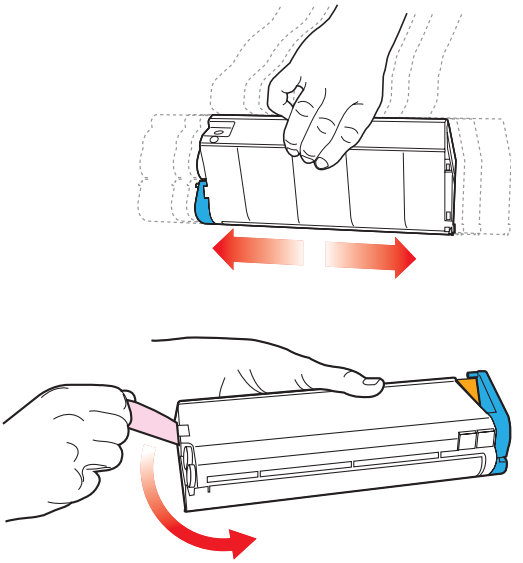
WARNING!

Take extreme care when handling toner.

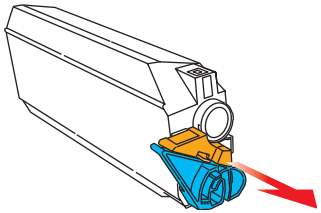
- ***Toner can be harmful if inhaled, swallowed or if it gets in the eyes.***
- ***Toner can also stain hands and clothing.***

See the Material Safety Data Sheets in your* Warranty, Regulatory and Safety Information *booklet for more information.

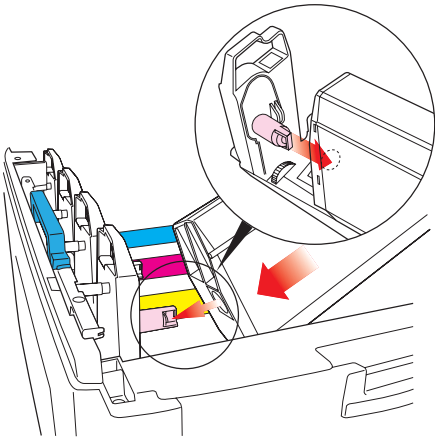
1. Remove the black toner cartridge from the package.
2. Shake the toner cartridge back and forth several times then, holding it horizontally, remove the tape.



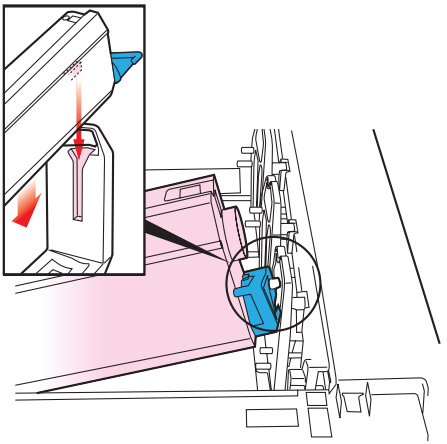
3. Remove the locking piece from behind the colored toner release lever.



4. Insert the toner cartridge into the black image drum, left side first, engaging the drum locating peg in the hole in the toner cartridge. *Make sure the colors of the toner cartridge and image drum correspond.*



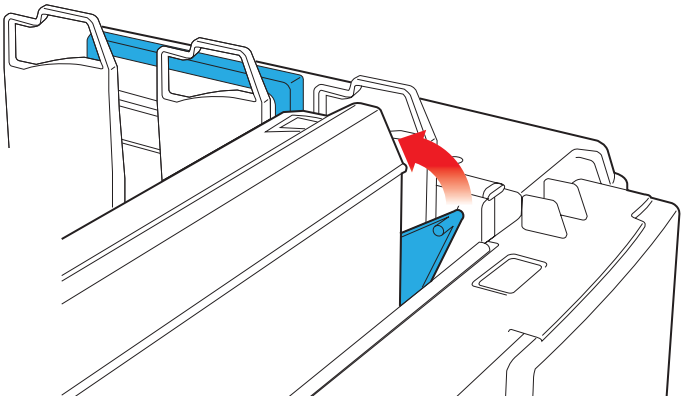
5. *Gently* push the toner cartridge down engaging the locking pin into the groove on the image drum.



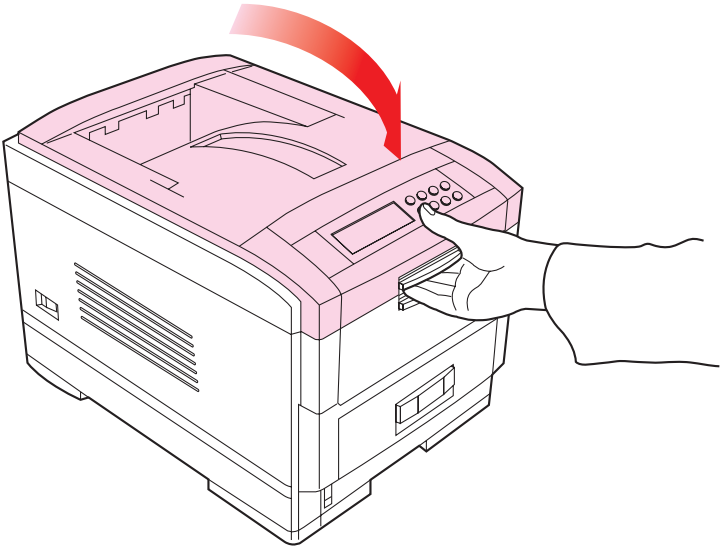
6. *Gently* push the colored lever toward the rear of the machine until it stops. This releases the toner into the image drum.

CAUTION!

The lever should go back easily. If the lever resists moving, *stop* and press down on the toner cartridge to be sure it is firmly in place before proceeding.

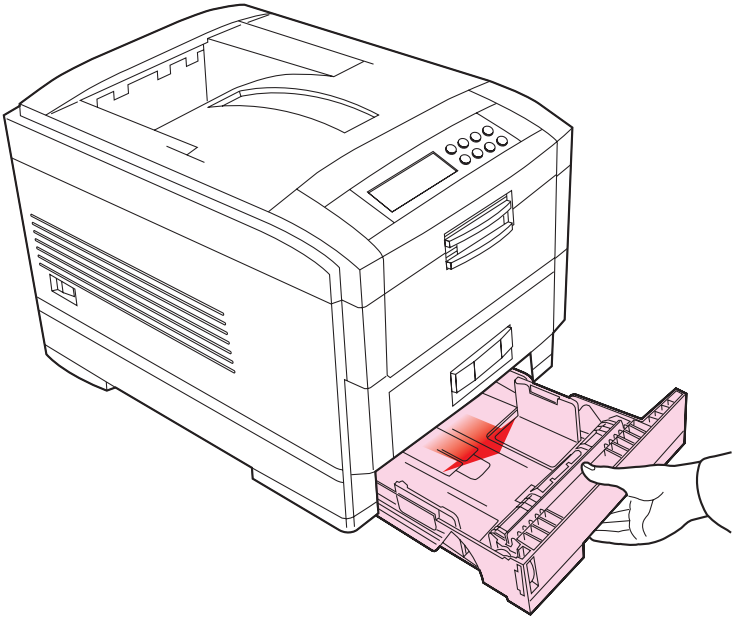


7. Repeat the process for each color toner cartridge, being careful to match the color toner to the color image drum.
8. Close the top cover.

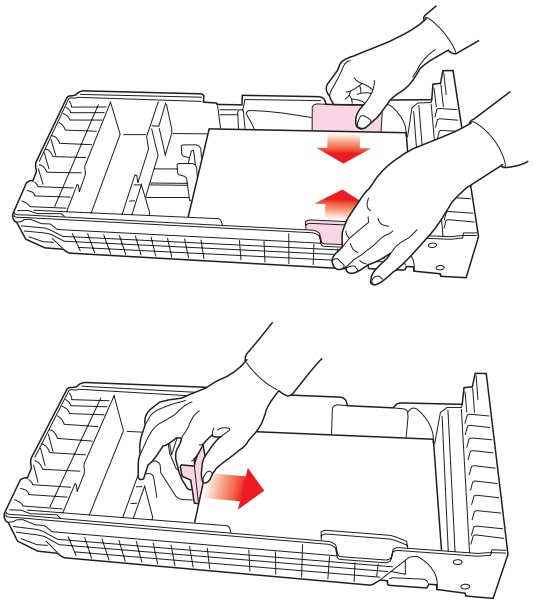


Loading Paper

1. Remove the paper tray from the printer.



2. Adjust the paper guides and rear stopper for the size of paper being used.

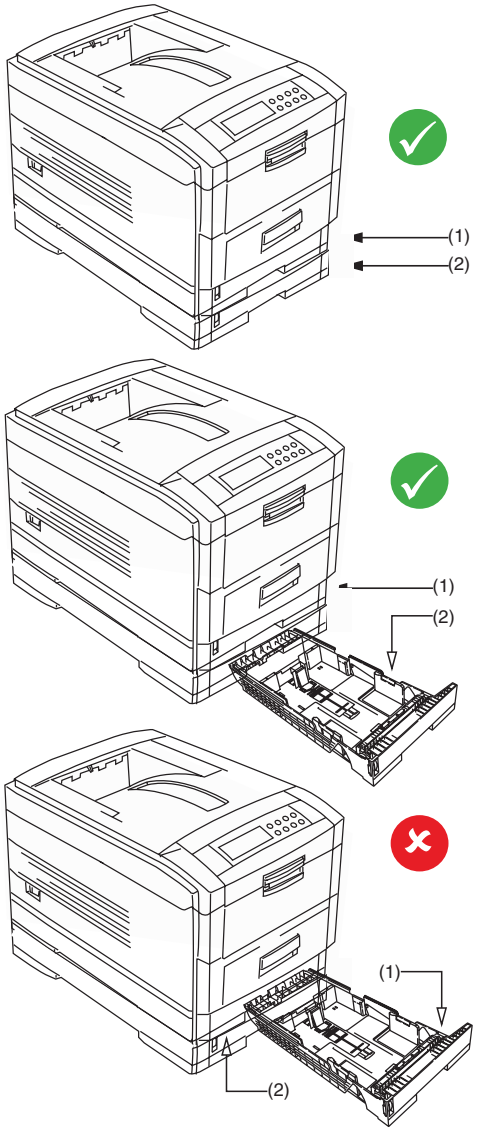


CAUTION!

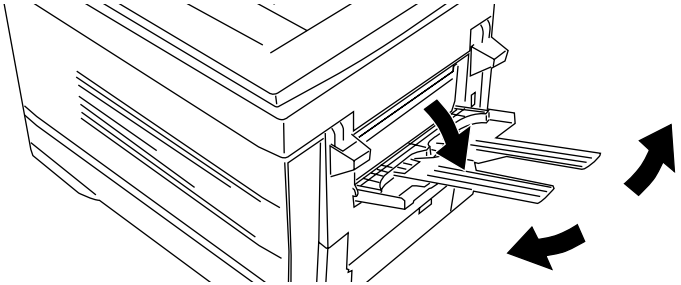
To prevent paper jams

- **Don’t leave space between the paper and the paper guides and rear stopper.**
- **Don’t overfill the paper tray. Capacity depends on the type of paper and the paper weight.**
- **Don’t load damaged paper.**
- **Don’t load paper of different sizes, paper quality or thickness at the same time.**
- **Don’t remove the paper tray during printing.**
- **Close the paper tray *gently*.**

3. If installed, a lower paper tray cannot be used to print if there is no paper tray inserted above it.



4. For face *down* printing, make sure the rear paper exit is *closed* (the paper exits from the *top* of the printer). Paper is stacked in printed order and the paper tray capacity is approximately 500 sheets, depending on paper weight.
5. For face *up* printing, make sure the rear paper exit is *open* and the paper supports are extended. Paper is stacked in reverse order and tray capacity is approximately 100 sheets, depending on paper weight.



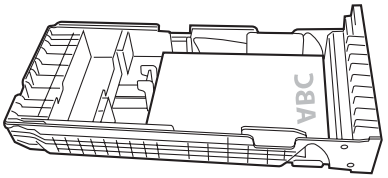
CAUTION!

Don't open or close the rear paper exit while printing, as it may result in a paper jam.

NOTE

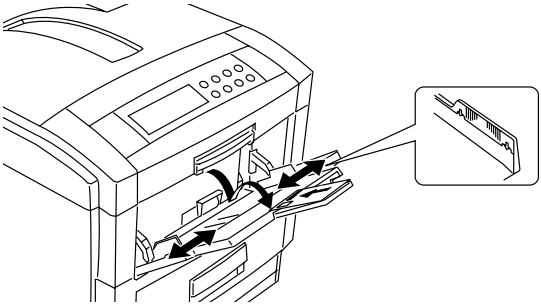
Always use the face down (rear) stacker for thick paper (card stock, etc.)

6. Load letterhead paper face down as shown for both portrait and landscape:



Manual Feed

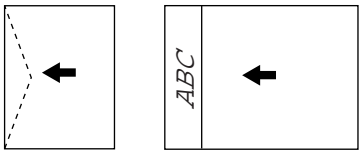
1. Open the Multi-purpose tray and extend the paper feed guides.



2. Load the media face *up*, and adjust the paper guides to the size of the media being used.

NOTE

- **Don't exceed the Paper Full line (about 100 sheets depending on paper weight, 50 transparencies or 10 envelopes).**
- **Load envelopes face up (flap down) and letterhead stationery face up as shown for both portrait and landscape printing.**



CAUTION!

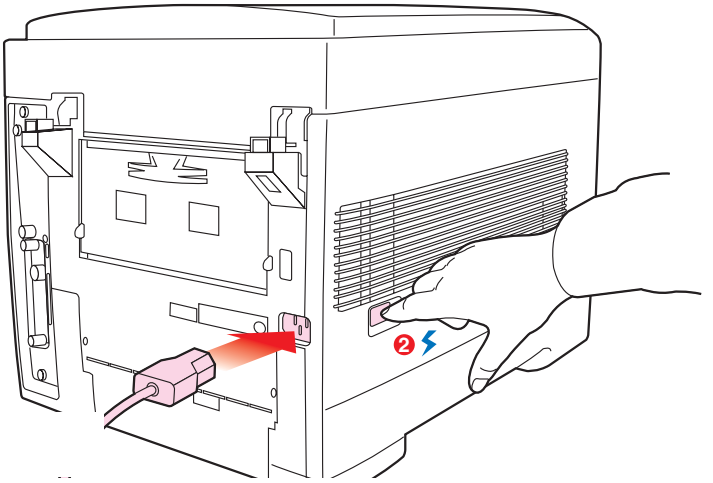
Don't open or close the rear paper exit while printing, as it may result in a paper jam.

Power Connection

WARNING!

Ensure both the printer power switch and the AC supply are switched OFF before connecting the power cable.

1. Connect the power cable (1) into the power socket on the printer, then into a grounded power supply outlet.



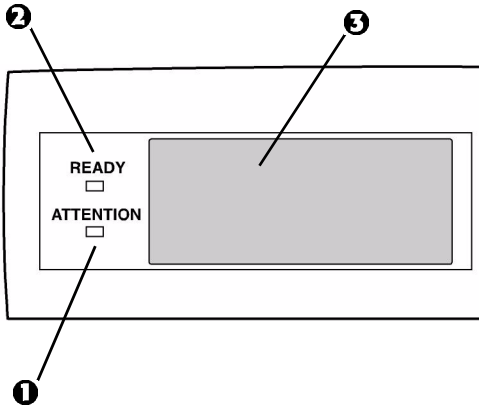
2. Switch the printer ON using the main power switch (2).

The printer will go through its initialization and warm up sequence. When the printer is ready, the READY indicator comes on and stays on (green) and the LCD indicates ONLINE.

NOTE

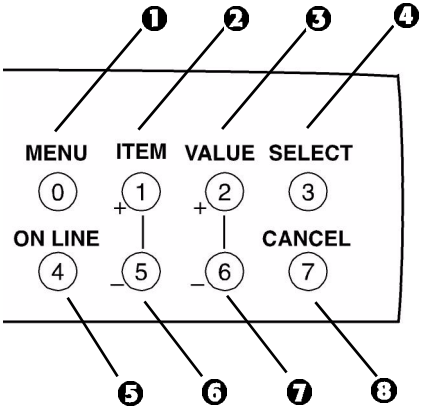
After installing the new toner cartridges, the message TONER LOW or CHANGE TONER may appear on the display. If this message does not disappear after a few pages have been printed, reinstall the appropriate toner cartridge.

Control Panel



1. **Attention indicator (red)**. ON indicates that attention is required, but *printing will continue*. FLASHING indicates that attention is required, but *printing will stop*.
2. **Ready indicator (green)**. ON - ready to receive data. FLASHING indicates processing data or error.
3. **Liquid crystal display.** (LCD) panel. Two rows of up to 24 alphanumeric characters displaying print status, menu items in menu mode and error messages.

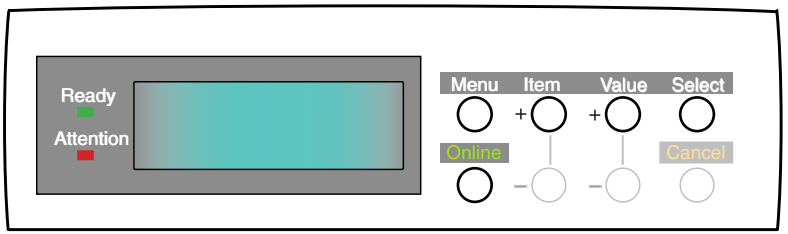
Control Panel (continued)



1. **Menu button**. Press briefly to enter the MENU mode. Press briefly again to select the next menu. Press for more than 2 seconds to scroll through the different menus.
2. **Item(+) button**. Press briefly to scroll forward to the next menu item.
3. **Value (+) button**. Press briefly to scroll forward to the next value setting for each menu item.
4. **Select button**. Press briefly to select the menu, item or value indicated on the LCD.
5. **Online button**. Switches between online and offline status
   – When pressed in Menu mode, it returns the printer to on line status.
   – When pressed with **DATA PRESENT** displayed, it forces the printer to print out the remaining data in the printer.
   – When there is an error message indicating wrong paper size, pressing the ONLINE button forces the printer to print.
6. **Item (–) button**. Press briefly to scroll backward to the previous menu item.
7. **Value (–) button**. Press briefly to scroll backward to the previous value setting for each menu item.
8. **Cancel button**. Press to cancel a print job.

Menu Settings

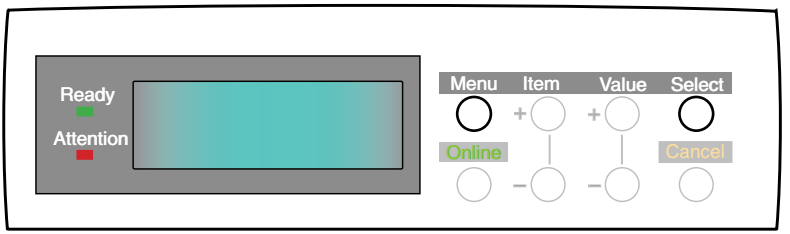
Changing the Display Language



Carry out the following instructions to change the language that is displayed on the printer's LCD.

1. Press the ONLINE button to put the printer offline.
2. Press the MENU button repeatedly until **SYSTEM CONFIG MENU** is displayed.
3. Press the SELECT button.
4. Press the ITEM button repeatedly until **LANGUAGE** is displayed.
5. Press the VALUE button repeatedly until the required language is displayed.
6. Press the SELECT button. An asterisk (*) appears next to the selected language.
7. Press the ONLINE button when you have finished setting the display language.

Printing the MenuMap



Print a list of menu settings to confirm that the printer is correctly configured.

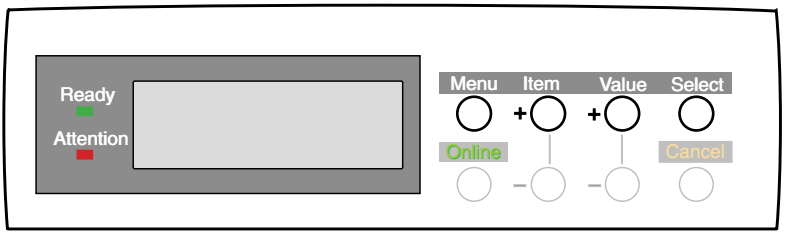
1. Make sure there is paper in the paper tray.
2. Press the MENU button until the **INFORMATION MENU** is displayed, then press the SELECT button.
3. Confirm that **PRINT MENU MAP** is displayed on the LCD.
4. Press the SELECT button to print the menu map.

Media Settings

NOTE

- **If the settings in the printer differ from those selected on your computer, the printer will not print and the LCD will display an error message.**
- **The following printer settings are given as a guide only. Some software applications require the paper feed, size and media settings to be selected from within the application (page setup).**

Selecting Paper Feed

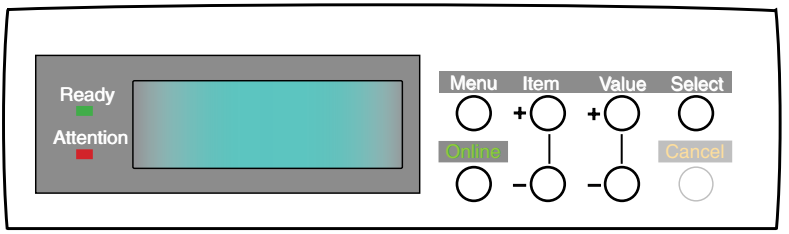


1. Press the ONLINE button to place the printer offline.
2. Press the MENU button repeatedly until **PRINT MENU** is displayed, then press the SELECT button.
3. Press the ITEM button until **PAPER FEED** is displayed.
4. Press the VALUE button until the required paper feed is displayed, then press the SELECT button. An asterisk (*) appears next to the selected paper feed.

NOTE

When AUTO TRAYSWITCH is set to ON and more than one paper tray is installed, paper feed automatically switches to the next available paper tray.

Selecting the Paper Size



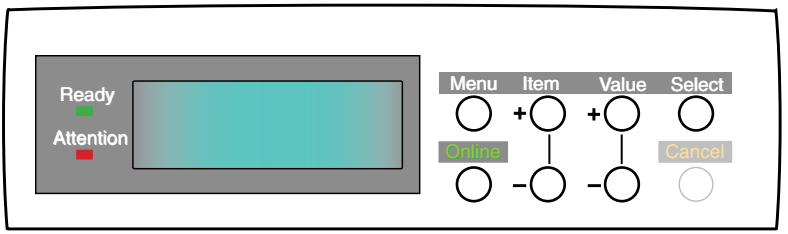
NOTE

- **When using paper trays, standard paper sizes are recognized automatically with CASSETTE SIZE (default setting) selected. Paper size need only be set for custom paper sizes.**
- **When using the Multi-Purpose (MP) tray (manual feed), the paper size has to be selected.**

1. Press the ONLINE button to place the printer offline.
2. Press the MENU button until **PRINT MENU** is displayed, then press SELECT button.
3. Press either ITEM (+) or (–) button repeatedly until **EDIT SIZE** is displayed.
4. Press either VALUE (+) or (–) button until the required paper size is displayed, then press the SELECT button. An asterisk (*) appears next to the selected paper size.
5. Press the ONLINE button to return the printer to online status.
6. Select the correct paper settings in the printer driver before printing the file.

Selecting the Media Type and Weight

Your printer automatically detects paper type and weight. You have the option, however, to override these settings as follows:



CAUTION!

If media type or media weight are not correctly set, print quality deteriorates and the fuser roller may be damaged.

1. Press the ONLINE button to place the printer offline.
2. Press the MENU button until **MEDIA MENU** is displayed, then press the SELECT button.
3. Press the ITEM (+) or (–) button until **MEDIA TYPE** or **MEDIA WEIGHT** for the required tray is displayed.
4. Press the VALUE (+) or (–) button until the required paper type or weight is displayed, then press the SELECT button. An asterisk (*) appears next to the selected paper type or weight.
5. Press the ONLINE button to return the printer back to online status.

Select the correct paper settings in the printer driver before printing the file.

Media Recommendations

We recommend the following guidelines when selecting media for use in this printer:

CAUTION

Print media must be able to withstand 446°F (230°C) for 0.2 second.

Paper

- For recommended papers see your authorized Sharp dealer.
- Paper should be stored flat and away from moisture, direct sunlight and heat sources.
- Don't use damp, damaged or curled paper.
- **The use of heavily laid or textured paper will seriously affect the life of the image drum and give poor print quality**. Print quality can be improved by changing the media setting to 'Ultra Heavy.' However, this will reduce the output speed and prevent the use of the duplex option.
- Don't use very smooth, shiny or glossy paper.
- Don't use heavily embossed headed paper, very rough paper or paper that has a large grain difference between the two sides.
- Don't use paper with perforations, cut-outs or ragged edges.
- Don't use carbon paper, NCR paper, photosensitive paper, pressure sensitive paper or thermal transfer paper.
- Don't use recycled paper.

Envelopes

- Use only recommended envelopes.
- Envelopes should be stored flat and away from moisture, direct sunlight and heat sources.
- Don’t use envelopes with windows or metal clasps.
- Don’t use envelopes with self sealing flaps.
- Don’t use damp, damaged or curled paper envelopes.

Labels

- For recommended labels see your authorized Sharp dealer.
- Use only labels designed for use in color laser printers and photocopiers.
- Labels should cover entire carrier sheet.
- Carrier sheet or adhesive must not be exposed to any part of the printer.

Paper Feed and Exit

Selection of which paper feed and which paper exit to use for printing and whether simplex (single sided) or duplex (double sided) printing is available, depends upon the paper size, media weight and media type that is used. Please refer to the following tables.

Paper Sizes

	Feed			Exit	
Paper size	Tray 1	Tray 2/Tray 3	MP Tray Manual	Rear (Face up)	Top (Face down)
A4	S, D[a]	S, D[a]	S[a]	S, D[a]	S, D[a]
A5	S, D[a]	S, D[a]	S[a]	S, D[a]	S, D[a]
A6	S[a]	[b]	S[a]	S[a]	[b]
B5	S, D[a]	S, D[a]	S[a]	S, D[a]	S, D[a]
Letter	S, D[a]	S, D[a]	S, D[a]	S, D[a]	S, D[a]
Legal (13in)	S, D[a]	S, D[a]	S, D[a]	S, D[a]	S, D[a]
Legal (14in)	S, D[a]	S, D[a]	S, D[a]	S, D[a]	S, D[a]
Executive	S, D[a]	S, D[a]	S, D[a]	S, D[a]	S, D[a]
Envelopes	[b]	[b]	S[a]	S[a]	[b]
Custom (width 76.2 to 215.9mm; height 127.0 to 1200 mm)	[b]	[b]	S[a]	S[a]	[b]

a. S = Simplex; D = Duplex (printing on both sides of the paper—requires optional duplex unit).
b. Not Usable.

Paper Weights and Media Settings

		Feed			Exit	
	Media weight	Tray 1	Tray 2/ Tray 3	MP Tray (Manual)	Rear (face up)	Top (face down)
Paper, US Bond (Metric)						
17 lb. (64 g/m^2)	Light	S[a]	S[a]	S[a]	S[a]	S[a]
18 to 19 lb. (68-71 g/m^2)	Medium light	S[a]	S[a]	S[a]	S[a]	S[a]
20 to 24 lb. (75-90 g/m^2)	Medium	S, D[a]	S, D[a]	S, D[a]	S, D[a]	S, D[a]
25 to 27 lb. (91-104 g/m^2)	Medium heavy	S, D[a]	S, D[a]	S, D[a]	S, D[a]	S, D[a]
28 to 32 lb. (105-122 g/m^2)	Heavy	[b]	[b]	S[a]	S[a]	S[a]
33 to 54 lb. (123-203 g/m^2)	Ultra heavy	[b]	[b]	S[a]	S[a]	[b]
Transaprencies: Media Weight Ignored						
Set MediaType = Transparency	[b]	S[a]	[b]	S[a]	S[a]	[b]
Labels						
0.1 to 0.17 mm thick	Medium Heavy	[b]	[b]	S[a]	S[a]	[b]
0.17 to 0.2 mm thick	Ultra Heavy	[b]	[b]	S[a]	S[a]	[b]

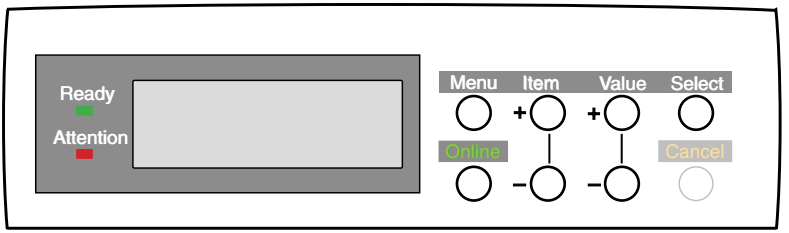
a. S = Simplex; D = Duplex (printing on both sides of the paper).
b. Not Usable.

Printer Settings

Confirming Current Settings

Current menu settings can be confirmed by printing the MenuMap: see “Printing the MenuMap” on page 34.

Changing the Settings



1. Press the MENU button until the required menu is displayed, then press the SELECT button.
2. Press the ITEM (+) or (–) button until the required item is displayed.
3. Press the VALUE (+) or (–) button until the required value is displayed.
4. Press the SELECT button. Selection of the value will be confirmed by an asterisk (*) appearing to the right of it.
5. Press the ONLINE button to return the printer to online status.

List of User Menu Settings

Listed in the following tables are the available printer settings. The default settings for the printer are in **bold** text.

Print Jobs Menu

This menu only appears if the hard disk drive is installed.

Item	Value	Description
ENTER PASSWORD	****	Sets password using a four-digit number (0~9). This item is also displayed even when OP MENU “ALL CATEGORY” is set to DISABLE in the Admin. menu.
SELECT JOB	No jobs; All jobs; File name 1 to nn	Selects printing job for Secure Print or Proof and Print. This item is also displayed even when OP MENU “ALL CATEGORY” is set to DISABLE in the Admin. menu.

Information Menu

Item	Value	Description
PRINT MENU MAP	Execute	Prints list of current menu settings.
PRINT FILE LIST	Execute	Prints job file list.
PRINT PCL FONT	Execute	Prints PCL font list.
PRINT PS FONT	Execute	Prints PostScript font list.
PRINT EPSON FX FONT	Execute	Prints an Epson FX font list.
PRINT ERROR LOG	Execute	Prints error log.

Test Print Menu

Item	Value	Description
PRINT ID CHECK PATTERN	Execute	Prints ID check pattern to detect bad ID. Displayed only if "TEST PRINT MENU" of the System Maintenance Menu is set to ENABLE.

Shutdown Menu

Item	Value	Description
SHUTDOWN START	Execute	Printer shut down sequence which prevents loss of data from the hard disk drive. *Appears only when the hard disk drive is installed.*

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Print Menu

The default settings are **bold** face.

Item	Value	Description
COPIES	**1** to 999	Sets the number of copies.
DUPLEX	On; **Off**	Specifies two-sided (duplex) printing if the optional duplex unit is installed.
BINDING	**Long edge**; Short edge	Sets binding for duplex printing. Only displayed if duplex is ON.
PAPER FEED	**Tray 1**; Tray 2; Tray 3; MP Tray	Selects source of paper feed. Tray 2 and 3 only displayed if installed.
AUTO TRAY SWITCH	**On**; Off	Automatic switching to next tray when tray in use empties.
TRAY SEQUENCE	**Down**; Up; Paper feed tray	Specifies selection order priority for switching Auto Tray Select/Auto Tray Switch.

Print Menu (continued)

The default settings are **bold** face.

Item	Value	Description
MP TRAY USAGE	Normal tray; High priority tray; **Feed when mismatching**; Do not use	Specifies MP tray usage. Normal tray: (Tray select/switch) Use as a normal tray. High priority tray: (Valid with Tray select only). If there is paper in the MP tray and Duplex is not specified, the printer uses the MP tray. Feed when mismatching. When a paper mismatch occurs (i.e. the tray's paper size/media type does not match the print data), a paper request is issued to the MP Tray. If the data is for Duplex print, a specified tray is used instead of the MP tray. Do not use. Even if auto switching, MP Tray will not be used. If MP Tray is designated in Paper Feed, printer behaves as though Normal Tray is selected.
MEDIA CHECK	**Enable**; Disable	Sets whether the printer checks the matching of paper size to that of the tray. Only standard sizes are checked.
TRANSPARENCY CHECK OHP	**Auto**; Disable	Enable/Disable the transparency auto detect function.
RESOLUTION	**600 dpi x 1200 dpi**	Selects print resolution.
TONER SAVE MODE	ON; **OFF**	ON: Enables Toner Save mode. OFF: Disables Toner Save mode.
MONO-PRINT SPEED	**Auto**; color speed; Normal speed	Selects monochrome printing speed. Auto: prints at the most appropriate speed for page process. Color: prints always at the color print speed. Normal: Always prints at the monochrome print speed.
ORIENTATION	**Portrait**; Landscape	Sets page orientation for printing.
LINE PER PAGE	5 to 128. Default = **60**.	Sets the number of lines that can be printed on a standard letter-size page. Invalid in PostScript mode.

Print Menu (continued)

The default settings are **bold** face.

Item	Value	Description
EDIT SIZE	**Cassette size**; Letter; Executive; Legal 14; Legal 13.5; Legal 13; A4; A5; A6; B5; Custom; Com-9* envelope; Com-10* envelope; Monarch* envelope; DL* Envelope; C5* Envelope *Use short edge feed.	Cassette size is selected when using standard sized paper in the paper tray. Edit size is only used when printing one page size onto a different paper size, e.g. A6 onto A4, edit size would be set to A6, but actual paper in paper tray is A4. Invalid in PostScript mode.

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Media Menu

The default settings are **bold**.

Item	Value	Description
TRAY1 MEDIATYPE	**Plain**; Letterhead; Transparency; Bond; Recycled; Card stock; Rough.	Selects the media type for Tray 1.
TRAY1 MEDIAWEIGHT	**AUTO**, Light, Medium light, Medium, Medium Heavy, Heavy, Ultra Heavy	Sets the media weight for Tray 1.
TRAY2 MEDIATYPE	**Plain**; Letterhead; Bond; Recycled; Card stock; Rough.	Sets the media type for optional Tray 2. (Only displayed if installed)
TRAY2 MEDIAWEIGHT	**Auto**; Light; Medium light; Medium; Medium heavy; Heavy; Ultra heavy	Selects the media WEIGHT for optional Tray2. (Only displayed if installed)
TRAY3 MEDIATYPE	**Plain**; Letterhead; Bond; Recycled; Card stock; Rough.	Selects the media type for optional Tray3. (Only displayed if installed)
TRAY3 MEDIAWEIGHT	**Auto**; Light; Medium light; Medium; Medium heavy; Heavy; Ultra heavy	Sets the paper weight for optional Tray. 3. (Only displayed if installed)

Media Menu (continued)

The default settings are **bold**.

Item	Value	Description
MP TRAY PAPERSIZE	A4; A5; A6; B5; Legal 14; Legal 13.5; Legal 13; **Letter**; Executive; Custom; Com-9 envelope; Com-10 envelope; Monarch envelope; DL Envelope; C5 Envelope	Sets the media size for the multipurpose tray.
MP TRAY MEDIATYPE	**Plain**; Letterhead; Transparency; Labels; Bond; Recycled; Card stock; Rough	Selects the paper type for multipurpose tray.
MP TRAY MEDIAWEIGHT	**Auto**; Light; Medium light; Medium; Medium heavy; Heavy; Ultra heavy	Sets the paper weight for the multipurpose tray.
UNIT OF MEASURE	**Inch**; Millimeters	Sets the units of measurement for custom paper size.
X DIMENSION	3 inches to **8.5 inches** (76 mm to 216 mm)	Sets the dimensions of custom paper. For these dimensions to work, the MP tray paper size must be set to custom.
Y DIMENSION	5 inches to 47.2 inches; default = **11 inches** (127 mm to 1200 mm)	Sets the dimensions of custom paper. For these dimensions to work, the MP tray paper size must be set to custom.

Color Menu

The default settings are **bold**.

Item	Value	Description
AUTO DENSITY MODE	**Auto**; Manual	Select whether density adjustment and Tone Response Curve (TRC) compensation is automatic. Auto: Density adjustment is automatically run under specified conditions, and reflected in the TRC compensation. Manual: Density adjustment is done manually (see page 70).

Color Menu (continued)

The default settings are **bold**.

Item	Value	Description
ADJUST DENSITY	Execute	If EXECUTE is selected, the printer will immediately adjust density and reflect it in the TRC compensation. Density adjustment must be executed when the printer is idle. It may become invalid if executed in any other state.
COLOR TUNING	Print pattern	Prints the pattern for the user to manually adjust TRC. Ordinarily this function is not needed because TRC is automatically adjusted. This function permits TRC adjustment to your requirement by using the adjustment menu of HIGHLIGHT, MID-TONE, and DARK for each of CMYK. See page 70.
CYAN, MAGENTA, YELLOW OR BLACK HIGHLIGHT	**0**+1+2+3-3-2-1	Adjusts HIGHLIGHT (light area) of Cyan, Magenta, Yellow or Black TRC. Plus indicates adjustment toward a darker level and minus toward lighter.
CYAN, MAGENTA, YELLOW OR BLACK MID-TONE	**0**+1+2+3-3-2-1	Adjusts MID-TONE of Cyan, Magenta, Yellow or BlackTRC. Plus indicates adjustment toward a darker level and minus toward lighter.
CYAN, MAGENTA, YELLOW OR BLACK DARK	**0**+1+2+3-3-2-1	Adjusts DARK of Cyan, Magenta, Yellow or Black TRC. Plus indicates adjustment toward a darker level and minus toward lighter.
CYAN, MAGENTA, YELLOW OR BLACK DARKNESS	0+1+2+3-4-3-2-1	Adjusts Cyan**,** Magenta**,** Yellow **or** Black engine density. Please do not change this setting.
ADJUST REGISTRATION	Execute	When this menu is selected, the printer performs an Auto Adjust Registration. Must be executed in the idle state (Auto Registration OFF).

Color Menu (continued)

The default settings are **bold**.

Item	Value	Description
CYAN REGISTRATION - FINE ADJUST	**0**+1+2+3-3-2-1	Fine Adjust makes an adjustment to image registration in Cyan, Magenta or Yellow against Black in the horizontal direction. The adjustment is reflected as an offset (addition) value to the corrections through Auto color Registration Correction. Values are adjusted in increments of .026 mm. Example: if the paper movement is upward - if a value is increased (+) it means the image moves downward in relation to it.
MAGENTA REGISTRATION - FINE ADJUST	**0**+1+2+3-3-2-1	
YELLOW REGISTRATION - FINE ADJUST	**0**+1+2+3-3-2-1	
INK SIMULATION	**Off**; SWOP	The printer has its own process simulation generator which simulates standard colors in the printer. This function is enabled only with Postscript language jobs.
INK LIMIT	**Dark**; Medium; Light	Selects the limit of the toner layer thickness. If paper curl occurs in DARK printing, select MEDIUM or LIGHT. This sometimes helps reduce curl.
CMY 100% DENSITY	**Disable**; enable	Selects enable/disable 100% output against the CMY100% TRC compensation. Ordinarily, the TRC compensation function controls the appropriate print density; thus, 100% output is not always enabled. Selecting ENABLE will allow 100% output. In actual printing, the TRC values, too, are controlled by color Matching. This function is used for special purposes; for example, to specify the color for CMYK color space in PS.

System Configuration Menu

The default settings are **bold**.

Item	Value	Description
POWER SAVE DELAY TIME	5 min; 15 min; 30 min; **60 min**; 240 min.	Sets the time before printer enters power save mode.
PERSONALITY	**Auto emulation**; PCL; IBM PPR III XL; Epson FX; Adobe PostScript	Selects the printer emulation language. Note: the only printer languages that can be selected are those enabled in the Personality section of the **Maintenance menu**.
USB PS-PROTOCOL	ASCII **RAW**	Specifies PostScript (PS) communication protocol mode of data from USB. (In RAW mode, Ctrl-T is invalid.)
NETWORK PS PROTOCOL	ASCII **RAW**	This Item displays only when the network card is installed. Specifies PS communication protocol mode of data from the network card . (In RAW mode, Ctrl-T is invalid.)
CLEARABLE WARNING	**On**; Job	PCL emulation: Sets the time before deleting error messages. If changed to Job, error remains displayed until next print job is received. PS emulation: Error messages are only shown during job regardless of setting.
AUTO CONTINUE	On; **Off**	Sets the printer to automatically recover after a memory overflow or print overrun.
MANUAL TIMEOUT	**60 sec**; 30 sec; Off	This parameter sets the period of time, that after requesting paper to be inserted and is not inserted, when the print job is cancelled. Only works in PostScript mode.
WAIT TIMEOUT	Off; 5 sec to 300 sec; default = **40 sec**	Sets the time between receiving the last byte of data and the page being automatically ejected. Only works in PCL mode. In PS mode the job will be cancelled.

System Configuration Menu (continued)

The default settings are **bold**.

Item	Value	Description
LOW TONER	**Continue**; Stop	If set to CONTINUE, allows printing to continue when Low toner is displayed. If STOP is selected - when Low toner is displayed, the printer goes off line.
JAM RECOVERY	**ON**; OFF	Sets whether or not printing will continue after a paper jam has been cleared. If set to OFF, the print job that was being printed when the paper jam occurred will be cancelled after clearing the paper jam. When set to ON, the print job will continue after the jam has been cleared.
ERROR REPORT	**ON**; OFF	When set to ON, prints an error report when internal error occurs. Only works in PostScript mode.
LANGUAGE	**English**; German; French; Italian; Spanish; Swedish; Norwegian; Danish; Dutch; Turkish; Portuguese; Polish	Selects the printer display language.

PCL Emulation Menu

The default settings are **bold**.

Item	Value	Description
FONT SOURCE	**Resident**; DIMM0; Downloaded	Selects location of the PCL font used. DIMM0 is displayed only when font DIMM ROM exists in the slot. Downloaded only appears if fonts have been down loaded to the printer.
FONT NO.	**I000**, C001, S001	Sets the PCL font number. I = internal (resident font); I000 = Courier. C = Font stored in the printer's Flash memory. S = downloaded soft font, stored on the printer's internal hard disk drive. Applies only to printers with a hard disk drive installed.
FONT PITCH	0.44 cpi to 99.99 cpi in 0.01 cpi increments Default = **10.00 cpi**	Sets the font width in characters per inch. Only displayed if the font is a fixed spacing outline font.
FONT HEIGHT	4.00 to 999.75 point, in 0.25 point increments Default = **12.00 point**	Sets the font point size. Applies only to fixed fonts (does not apply to proportional fonts).

PCL Emulation Menu (continued)

The default settings are **bold**.

Item	Value	Description
SYMBOL SET	**PC-8**, PC-8 Dan/Nor, PC-8 TK, PC-775, PC-850, PC-852, PC-855, PC-857 TK, PC-858, PC-866, PC-869, PC-1004, Pi Font, Plska Mazvia, PS Math, PS Text, Roman-8, Roman-9, Roman Ext, Serbo Croat1, Serbo Croat2, Spanish, Ukrainian, VN Int'l, VN Math, VN US, Win 3.0, Win 3.1 Blt, Win 3.1 Cyr, Win 3.1 Grk, Win 3.1 Heb, Win 3.1 L1, Win 3.1 L2, Win 3.1 L5, Wingdings, Dingbats MS, Symbol, OCR-A, OCR-B, HP ZIP, USPSFIM, USPSSTP, USPSZIP, Bulgarian, CWI Hung, DeskTop, German, Greek-437, Greek-437 Cy, Greek-928, Hebrew NC, Hebrew OC, IBM-437, IBM-850, IBM-860, IBM-863, IBM-865, ISO Dutch, ISO L1, ISO L2, ISO L5, ISO L6, ISO L9, ISO Swedish1, ISO Swedish2, ISO Swedish3, ISO-2 IRV, ISO-4 UK, ISO-6 ASC, ISO-10 S/F, ISO-11 Swe, ISO-14 JASC, ISO-15 Ita, ISO-16 Por, ISO-17 Spa, ISO-21 Ger, ISO-25 Fre, ISO-57 Chi, ISO-60 Nor, ISO-61 Nor, ISO-69 Fre, ISO-84 Por, ISO-85 Spa, Kamenicky, Legal, Math-8, MC Text, MS Publish, PC Ext D/N, PC Ext US, PC Set1, PC Set2 D/N, PC Set2 US,	Selects a PCL character symbol set.
A4 PRINT WIDTH	**78 column**; 80 column	If you are printing a letter size document on an A4 size sheet, select 80 column. This condenses the print to fit on the slightly narrower A4 sheet, without changing the line breaks.

PCL Emulation Menu (continued)

The default settings are **bold**.

Item	Value	Description
WHITE PAGE SKIP	**OFF**; ON	Change this setting to ON if you do not wish to print blank pages; PCL mode.
CR FUNCTION	**CR**; CR+LF	Sets functionality on receipt of CR code in PCL mode.
LF FUNCTION	**LF**; LF+CR	Sets functionality on receipt of LF code in PCL mode.
PRINT MARGIN	**Normal**; 1/5 inch; 1/6 inch	Sets the width of the non-printed margins.
TRUE BLACK	**OFF**, ON	PCL only: Sets whether to use Composite Black (CMYK mixed) or Pure Black (K only) for the black (100%) in image data. OFF = Composite (CMYK) Black. Provides best results when printing photographs. ON = Pure Black (black toner only). Provides best results when printing a combination of text and graphics.

PPR Emulation Menu

The default settings are **bold**.

Item	Value	Description
PEN WIDTH ADJUST	**ON**; OFF	IN PCL, when switched ON, emphasizes the pen width to improve the appearance of lines specified with minimum width.
CHARACTER PITCH	**10 CPI**; 12 CPI; 17 CPI; 20 CPI; PROPORTIONAL	Specifies character pitch in IBM PPR emulation.
FONT CONDENSE	**12CPI to 20 CPI**; 12CPI to 12CPI	Specifies 12CPI pitch for Condense Mode.
CHARACTER SET	**Set 2**; Set 1	Specifies a character set.

PPR Emulation Menu (continued)

The default settings are **bold**.

Item	Value	Description
SYMBOL SET	PC-8, PC-8 Dan/Nor, PC-8 TK, PC-775, PC-850, PC-852, PC-855, PC-857 TK, PC-858, PC-866, PC-869, PC-1004, Pi Font, Plska Mazvia, PS Math, PS Text, Roman-8, Roman-9, Roman Ext, Serbo Croat1, Serbo Croat2, Spanish, Ukrainian, VN Int'l, VN Math, VN US, Win 3.0, Win 3.1 Blt, Win 3.1 Cyr, Win 3.1 Grk, Win 3.1 Heb, Win 3.1 L1, Win 3.1 L2, Win 3.1 L5, ISO Swedish1, ISO Swedish2, ISO Swedish3, ISO-2 IRV, ISO-4 UK, ISO-6 ASC, ISO-10 S/F, ISO-11 Swe, ISO-14 JASC, ISO-15 Ita, ISO-16 Por, ISO-17 Spa, ISO-21 Ger, ISO-25 Fre, ISO-57 Chi, ISO-60 Nor, ISO-61 Nor, ISO-69 Fre, ISO-84 Por, ISO-85 Spa, Kamenicky, Legal, Math-8, MC Text, MS Publish, PC Ext D/N, PC Ext US, PC Set1, PC Set2 D/N, PC Set2 US, Bulgarian, CWI Hung, DeskTop, German, Greek-437, Greek-437 Cy, Greek-928, Hebrew NC, Hebrew OC, **IBM-437**, IBM-850, IBM-860, IBM-863, IBM-865, ISO Dutch, ISO L1, ISO L2, ISO L5, ISO L6, ISO L9	Specifies a symbol set.
LETTER 0 STYLE	**Disable**; Enable	Specifies the style that replaces 9B Hex with the letter o and 9D Hex with a zero
ZERO CHARACTER	**Normal**; Slashed	Sets the zero to be slashed or unslashed.
LINE PITCH	**6 LPI**; 8 LPI	Specifies the line spacing (lines per inch).

PPR Emulation Menu (continued)

The default settings are **bold**.

Item	Value	Description
WHITE PAGE SKIP	**OFF**; ON	Change this setting to ON if you do not wish to print blank pages. Not available for duplex printing.
CR FUNCTION	**CR**; CR+LF	Sets functionality on receipt of CR code.
LF FUNCTION	**LF**; LF+CR	Sets functionality on receipt of LF code.
LINE LENGTH	**80 COLUMN**; 136 COLUMN	Specifies the number of characters per line.
FORM LENGTH	**11 INCH**; 11.7 INCH; 12 INCH	Specifies the length of paper.
TOF POSITION	0.0 to **1.0 INCH**, in 0.1-inch increments	Specifies the distance of print from the top edge of the paper.
LEFT MARGIN	0.0 to **1.0 INCH**, in 0.1-inch increments	Specifies the distance of print from the left hand edge of the paper.
FIT TO LETTER	Disable; **Enable**	Fits print data, equivalent to 11 inches (66 lines), in the LETTER-size printable area.
TEXT HEIGHT	**Same**; Diff	Sets the height of a character. SAME: Same height regardless of CPI. DIFF: Height varies depending on CPI.

FX Emulation Menu

The default settings are **bold**.

Item	Value	Description
CHARACTER PITCH	**10 CPI**; 12 CPI; 17 CPI; 20 CPI; PROPORTIONAL	Specifies character pitch in this emulation.
CHARACTER SET	**Set 2**; Set 1	Specifies which Epson character set is used.
SYMBOL SET	PC-8, PC-8 Dan/Nor, PC-8 TK, PC-775, PC-850, PC-852, PC-855, PC-857 TK, PC-858, PC-866, PC-869, PC-1004, Pi Font, Plska Mazvia, PS Math, PS Text, Roman-8, Roman-9, Roman Ext, Serbo Croat1, Serbo Croat2, Spanish, Ukrainian, VN Int'l, VN Math, VN US, Win 3.0, Win 3.1 Blt, Win 3.1 Cyr, Win 3.1 Grk, Win 3.1 Heb, Win 3.1 L1, Win 3.1 L2, Win 3.1 L5, ISO Swedish1, ISO Swedish2, ISO Swedish3, ISO-2 IRV, ISO-4 UK, ISO-6 ASC, ISO-10 S/F, ISO-11 Swe, ISO-14 JASC, ISO-15 Ita, ISO-16 Por, ISO-17 Spa, ISO-21 Ger, ISO-25 Fre, ISO-57 Chi, ISO-60 Nor, ISO-61 Nor, ISO-69 Fre, ISO-84 Por, ISO-85 Spa, Kamenicky, Legal, Math-8, MC Text, MS Publish, PC Ext D/N, PC Ext US, PC Set1, PC Set2 D/N, PC Set2 US, Bulgarian, CWI Hung, DeskTop, German, Greek-437, Greek-437 Cy, Greek-928, Hebrew NC, Hebrew OC, **IBM-437**, IBM-850, IBM-860, IBM-863, IBM-865, ISO Dutch, ISO L1, ISO L2, ISO L5, ISO L6, ISO L9	Specifies a symbol set.

FX Emulation Menu (continued)

The default settings are **bold**.

Item	Value	Description
LETTER 0 STYLE	**DISABLE**; ENABLE	Specifies the style that replaces 9B Hex with letter o and 9D Hex with a zero
ZERO CHARACTER	**NORMAL**; SLASHED	Sets the zero to be slashed or unslashed.
LINE PITCH	**6 LPI**; 8 LPI	Specifies the line spacing (lines per inch).
WHITE PAGE SKIP	**OFF**; ON	Change this setting to ON if you do not wish to print blank pages Not available for duplex printing.
CR FUNCTION	**CR**; CR+LF	Sets functionality on receipt of CR code.
LF FUNCTION	**LF**; LF+CR	Sets functionality on receipt of LF code.
LINE LENGTH	**80 COLUMN**; 136 COLUMN	Specifies the number of columns that will print on a page (characters per line).
FORM LENGTH	**11 inch**; 11.7 inch; 12 inch	Specifies the length of print media.
TOF POSITION	**0.0** to 1.0 inch in 0.01-inch increments	Specifies the distance of print from the top edge of the paper.
LEFT MARGIN	**0.0** to 1.0 inch in 0.01-inch increments	Specifies the distance of print from the left hand edge of the paper.
FIT TO LETTER	DISABLE; **ENABLE**	Sets the printing mode that can fit print data, equivalent to 11 inches (66 lines), in the LETTER-size printable area.
TEXT HEIGHT	**SAME**; DIFF	Sets the height of a character. SAME: Same height regardless of CPI. DIFF: Height varies depending on CPI.

Parallel Menu

The default settings are **bold**.

Item	Value	Description
PARALLEL	**ENABLE**; DISABLE	Selects parallel (Centronics) interface.
BI-DIRECTION	**ENABLE**; DISABLE	Selects bi-directional communication.
ECP	**ENABLE**; DISABLE	Selects ECP mode.
ACK WIDTH	**NARROW**; MEDIUM; WIDE	Sets ACK width for compatible reception: Narrow = 0.5 µS Medium = 1.0 µS Wide = 3.0 µS
ACK/BUSY TIMING	**ACK-IN-BUSY**; ACK-WHILE-BUSY	Sets output order for ACK and BUSY during reception. ACK IN BUSY: BUSY=LOW to the end of the ACK pulse. ACK WHILE BUSY: BUSY=LOW to the center of the ACK pulse.
I-PRIME	3 MICRO SEC; 50 MICRO SEC; **DISABLE**	Sets or disables the i-Prime signal.
OFFLINE RECEIVE	ENABLE; **DISABLE**	Enable = maintains reception without changing the interface signal, even though an alarm occurs. The interface stays open even if the ON LINE button is pressed. The interface issues a BUSY signal only when the receive buffer is full.

USB Menu

The default settings are **bold**.

Item	Value	Description
USB	**ENABLE**; DISABLE	Selects USB interface.
SOFT RESET	ENABLE; **DISABLE**	Enables/Disables soft reset command.
OFFLINE RECEIVE	ENABLE; **DISABLE**	Enable = maintains reception without changing the interface signal, even if an alarm occurs. The interface stays open even if the ON LINE button is pressed. The interface issues a BUSY signal only when the receive buffer is full.

Network Menu

The default settings are **bold**.

Item	Value	Description
TCP/IP	**ENABLE**; DISABLE	Selects TCP/IP protocol.
NETWARE	**ENABLE**; DISABLE	Selects Netware protocol.
ETHERTALK	**ENABLE**; DISABLE	Selects EtherTalk protocol.
NETBEUI	**ENABLE**; DISABLE	Selects NetBEUI protocol.
FRAME TYPE	**AUTO**; 802.2; 802.3 ETHER-II; SNAP	Selects Ethernet frame type.
DHCP/BOOTP	**ENABLE**; DISABLE	Selects whether selection of DHCP/ BOOTP is automatic.
RARP	ENABLE; **DISABLE**	Selects whether selection of RARP is automatic.
IP ADDRESS	xxx.xxx.xxx.xxx	Configures IP address.
SUBNET MASK	xxx.xxx.xxx.xxx	Configures subnet mask.
GATEWAY ADDRESS	xxx.xxx.xxx.xxx	Configures gateway address.
PRINT SETTINGS	ON; **OFF**	Selects printing of network menu map. ON = When printer exits the menu mode it will print the network MenuMap showing results of self-diagnosis and settings.
INITIALIZE	ON; **OFF**	Selects network initialization. ON = network initializes as the printer exits the menu.

Memory Menu

The default settings are **bold**.

Item	Value	Description
RECEIVE BUFF SIZE	**AUTO**; 0.5 MB; 1 MB; 2 MB; 4 MB; 8 MB; 16 MB; 32 MB	Sets the size of the receive buffer and depends on the amount of memory installed in the printer.
RESOURCE SAVE	AUTO; **OFF**; 0.5 MB; 1 MB; 2 MB; 4 MB; 8 MB; 16 MB; 32 MB	Set the size of the font cache area and depends on the amount of memory installed in the printer.
FLASH INITIALIZE	EXECUTE	Initializes flash memory if installed.
PS FLASH RESIZE	0% [n.n MB] TO 90% [n.n MB], in 10% increments	Changes the size of the flash memory area. “n.n” indicates the actual size in MB. Note: Special data is stored in the Flash Memory, therefore you cannot specify 100%.

CAUTION!

The Disk Maintenance Menu can be used to initialize the printer's internal hard disk drive, to reassign the partition contents, or to reformat the partitions.

It is recommended that disk maintenance be done only by the System Administrator, or by someone who is knowledgeable in this area.

Disk Maintenance Menu

The default settings are **bold**.

Displays only when optional Hard Disk Drive is installed.

Item	Value	Description
HDD INITIALIZE	EXECUTE	Partitions hard disk and formats each partition. Appears only if hard disk drive is installed.
PARTITION SIZE	nnn% / mmm% / xxx%	Sets usage of hard disk drive partitions: nnn = Common mmm = PCL xxx = PS Range for each partition: 1 to 98% in 1% increments. nnn + mmm + xxx = 100%.
HDD FORMATTING	**PCL**, COMMON, PS	Formats specified partition.

System Adjust Menu

The default settings are **bold**.

Item	Value	Description
X ADJUST	**0.00 MM**; Range +0.25 TO +2.0 MM and – 2.0 TO – 0.25 MM in 0.25 mm increments	Adjusts overall print position horizontally in 0.20 increments.
Y ADJUST	**0.00 MM**; Range +0.25 TO +2.0 MM and – 2.0 TO – 0.25 MM in 0.25 mm increments	Adjusts overall print position vertically in 0.20 increments.
DUPLEX X ADJUST	**0.00 MM**; Range +0.25 TO +2.0 MM and – 2.0 TO – 0.25 MM in 0.25 mm increments	Adjusts overall print position of print face horizontally in 0.20 increments. Displays only when optional Duplex Unit is installed.
DUPLEX Y ADJUST	**0.00 MM**; Range +0.25 TO +2.0 MM and – 2.0 TO – 0.25 MM in 0.25 mm increments	Adjusts overall print position of print face vertically in 0.20 increments Displays only when optional Duplex Unit is installed.
TRAY 1 LEGAL 14	**LEGAL 14**; LEGAL 13.5	Sets Tray 1 legal paper size.
TRAY 2 LEGAL 14	**LEGAL 14**; LEGAL 13.5	Sets Tray 2 legal paper size. Appears only if optional Tray 2 is installed.
TRAY 3 LEGAL 14	**LEGAL 14**; LEGAL 13.5	Sets Tray 3 legal paper size. Appears only if optional Tray 3 is installed.
PCL TRAY 2 ID#	1 to 59; default = **5**	Sets Tray 2 number for PCL emulation. Appears only if optional Tray 3 is installed.
PCL TRAY 3 ID#	1 – 59; default = **20**	Sets Tray 3 number for PCL emulation. Appears only if optional Tray 3 is installed.
PCL MP TRAY ID#	1 – 59; default = **4**	Sets MP tray number for PCL emulation.

System Adjust Menu (continued)

The default settings are **bold**.

Item	Value	Description
HEX DUMP	EXECUTE	Press SELECT to switch the printer to the Hexadecimal Dump mode in which all data received is printed in both Hexadecimal and ASCII format. To return to normal print mode, switch the printer off then on again.

Maintenance Menu

The default settings are **bold**.

Item	Value	Description
EEPROM RESET	EXECUTE	Initializes EEPROM for each unit.
SAVE MENU	EXECUTE	Saves the current menu settings.
RESTORE	EXECUTE	Reverts to stored menu settings. (Only displayed if there are saved menu settings).
POWER SAVE	**ENABLE**; DISABLE	When no input is received for a specified time, the printer will enter Power Save Mode. See also “Power Save Delay Time” under the System configuration menu on page 47.
PAPER BLACK SETTING	**0**; +1; +2; –2; –1	Not normally used.
PAPER COLOR SETTING	**0**; +1; +2; –2; –1	Not normally used.
TRANSPR BLACK SETTING	**0**; +1; +2; –2; –1	Not normally used.
TRANSPR COLOR SETTING	**0**; +1; +2; –2; –1	Not normally used.

Usage Menu

The default settings are **bold**.

Item	Value	Description
TOTAL PAGE COUNT	nnnnnn	Shows total number of pages printed.
TRAY 1 PAGE COUNT	nnnnnn	Shows number of pages printed from tray 1.
TRAY 2 PAGE COUNT	nnnnnn	Shows number of pages printed from tray 2. Displayed if optional tray 2 is installed.
TRAY 3 PAGE COUNT	nnnnnn	Shows number of pages printed from tray 3. Displayed if optional tray 3 is installed.
MP TRAY PAGE COUNT	nnnnnn	Shows number of pages printed from multipurpose paper tray.
COLOR PAGE COUNT	nnnnnn	Number of pages printed in color.
MONOCHROME PAGE COUNT	nnnnnn	Number of pages printed in monochrome.
BLACK DRUM LIFE	REMAINING nnn%	Displays the remaining life of the black image drum as a percentage.
CYAN DRUM LIFE	REMAINING nnn%	Displays the remaining life of the cyan image drum as a percentage.
MAGENTA DRUM LIFE	REMAINING nnn%	Displays the remaining life of the magenta image drum as a percentage.
YELLOW DRUM LIFE	REMAINING nnn%	Displays the remaining life of the yellow image drum as a percentage.
BELT LIFE	REMAINING nnn%	Displays the remaining life of the belt as a percentage.
FUSER LIFE	Remaining nnn%	Displays the remaining life of the fuser roller as a percentage.
BLACK TONER	15K = xxx%; 5K = xxx%	Displays black toner remaining.
CYAN TONER	15K = xxx%; 5K = xxx%	Displays cyan toner remaining.
MAGENTA TONER	15K = xxx%; 5K = xxx%	Displays magenta toner remaining.
YELLOW TONER	15K = xxx%; 5K = xxx%	Displays yellow toner remaining.

List of Administrator Menu Settings

NOTE

Only system administrators have access to this menu.

To enter this menu, turn on the printer while holding down the ITEM+ button.

OP Menu

The default settings are **bold**.

Item	Value	Description
ALL CATEGORY	**ENABLE**, DISABLE	Enable/Disable all categories of User Menu. Set to Disable, the User Menu is not shown except the PRINT JOB MENU. Panel Lock is still available.
PRINT JOBS MENU	**ENABLE**, DISABLE	Enable/Disable PRINT JOBS MENU. Set to Disable, PRINT JOBS MENU is not displayed. (PRINT JOB MENU is displayed when this MENU setting is set to ENABLE even though ALL CATEGORY is set to DISABLE.)
INFORMATION MENU	**ENABLE**, DISABLE	Enable/Disable INFORMATION MENU. Set to Disable, INFORMATION MENU is not displayed.
SHUTDOWN MENU	**ENABLE**, DISABLE	Enable/Disable SHUTDOWN MENU. Set to Disable, SHUTDOWN MENU is not displayed.
PRINT MENU	**ENABLE**, DISABLE	Enable/Disable PRINT MENU. Set to Disable, PRINT MENU is not displayed.
MEDIA MENU	**ENABLE**, DISABLE	Enable/Disable MEDIA MENU. Set to Disable, MEDIA MENU is not displayed.
COLOR MENU	**ENABLE**, DISABLE	Enable/Disable color MENU. Set to Disable, color MENU is not displayed.
SYSTEM CONFIG MENU	**ENABLE**, DISABLE	Enable/Disable SYSTEM MENU. Set to Disable, SYSTEM MENU is not displayed.
PCL EMULATION MENU	**ENABLE**, DISABLE	Enable/Disable PCL EMULATION MENU. Set to Disable, PCL EMULATION MENU is not displayed.

OP Menu (continued)

The default settings are **bold**.

Item	Value	Description
PPR EMULATION MENU	**ENABLE**, DISABLE	Enable/Disable PPR EMULATION MENU. Set to Disable, PPR EMULATION MENU is not displayed.
FX EMULATION MENU	**ENABLE**, DISABLE	Enable/Disable FX EMULATION MENU. Set to Disable, FX EMULATION MENU is not displayed.
PARALLEL MENU	**ENABLE**, DISABLE	Enable/Disable PARALLEL MENU. Set to Disable, PARALLEL MENU is not displayed.
USB MENU	**ENABLE**, DISABLE	Enable/Disable USB MENU. Set to Disable, USB MENU is not displayed.
IEEE 1394 MENU	**ENABLE**, DISABLE	Displayed only when the IEEE 1394 board is installed. Enable/Disable IEEE 1394 MENU. Set to Disable, IEEE 1394 MENU is not displayed.
NETWORK MENU	**ENABLE**, DISABLE	Displayed only when the Network Interface Card is installed. Enable/Disable NETWORK MENU. Set to Disable, NETWORK MENU is not displayed.
MEMORY MENU	**ENABLE**, DISABLE	Enable/Disable MEMORY MENU. Set to Disable, MEMORY MENU is not displayed.
DISK MAINTENANCE	**ENABLE**, DISABLE	Enable/Disable DISK MAINTENANCE MENU. Set to Disable, DISK MAINTENANCE MENU is not displayed.
SYSTEM ADJUST MENU	**ENABLE**, DISABLE	Enable/Disable SYSTEM ADJUST MENU. Set to Disable, SYSTEM ADJUST MENU is not displayed.
MAINTENANCE MENU	**ENABLE**, DISABLE	Enable/Disable MAINTENANCE MENU. Set to Disable, MAINTENANCE MENU is not displayed.
USAGE MENU	**ENABLE**, DISABLE	Enable/Disable USAGE MENU. Set to Disable, USAGE MENU is not displayed.
PEAK POWER CONTROL	Normal/Low	Sets PEAK POWER CONTROL.

Color Menu

The default settings are **bold**.

Item	Value	Description
RESET C GAMMA FILTER	EXECUTE	Reset the stored TRC data (retained for tracking). For example, correct values could not be taken due to “out of order” situation. This is mainly for maintenance purposes and *not ordinarily used*.
RESET M GAMMA FILTER	EXECUTE	
RESET Y GAMMA FILTER	EXECUTE	
RESET K GAMMA FILTER	EXECUTE	

Block Device Menu

The default settings are **bold**.

Item	Value	Description
INITIALIZE LOCK	YES, **NO**	Change to YES to block the operator panel from showing FLASH INITIALIZE ITEM and PS FLASH RESIZE ITEM in the Disk maintenance and Memory menus.

Peak Power Control Menu

The default settings are **bold**.

Item	Value	Description
PEAK POWER CONTROL	**NORMAL**, LOW	Sets Peak Power Control.

Setting Color Tuning from the Front Panel

Important!

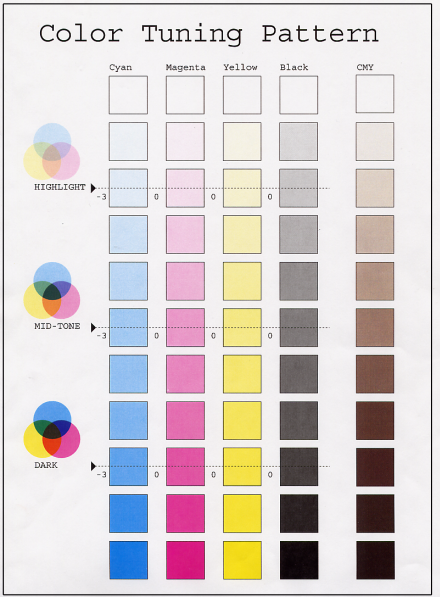
- In most cases, using Color Tuning is not necessary as the printer is optimized for color printing at its default settings.
- Once you change these settings, they remain in effect until you go back in and change them.
- To return the settings to the defaults, use the steps below to set each value back to 0 (zero).

You can use the printer's menu to adjust the color intensity for a specific color by adjusting the HIGHLIGHT, MID-TONE and DARK (shadows) Color Tuning Patterns.

- To *increase* the color intensity, use a higher positive setting (default = 0, maximum = +3).
- To *decrease* the color intensity, use a higher negative setting (default = 0, maximum = -3).

For example, to adjust the intensity of the magenta portion:

1. Print the Color Tuning Pattern:



a. Make sure letter size paper is loaded in the tray.

b. Press the MENU button one or more times, until **COLOR MENU** displays.

c. Press the ITEM button one or more times, until **COLOR TUNING** displays.

d. Press SELECT.
The Color Tuning Pattern prints.

2. Adjust the Magenta highlight color.

a. Press the ITEM button one or more times, until **MAGENTA HIGHLIGHT** nn displays.

b. Press the VALUE button one or more times, until the new value you wish to use displays (e.g., +3).

c. Press the SELECT button.
An asterisk (*) appears at the right of the number.

3. Adjust the Magenta mid-tone color:
   a. Press the ITEM button one or more times, until **MAGENTA MID-TONE** nn appears.
   b. Press the VALUE button one or more times, until the new value you wish to use displays (e.g., nn = +3).
   c. Press the SELECT button.
   An asterisk (*) appears at the right of the number.
4. Adjust the Magenta dark color:
   a. Press the ITEM button one or more times, until **MAGENTA DARK** nn displays.
   b. Press the VALUE button one or more times, until the new value you wish to use displays (e.g., nn = +3).
   c. Press the SELECT button.
   An asterisk (*) appears at the right of the number.
5. Press the ON LINE button to save the new setting and return the printer to online status
6. Print from your application.

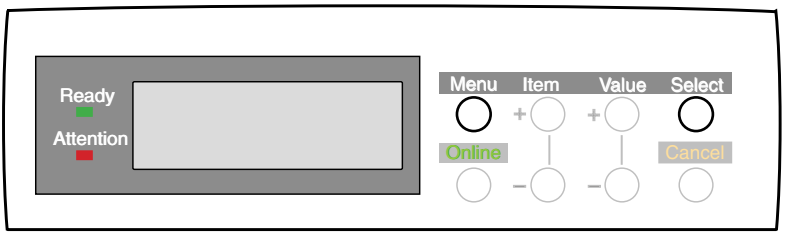
Repeat the above steps until you get the desired magenta color intensity.

NOTE

To adjust these settings for the Cyan, Yellow or Black color intensity, substitute the appropriate color name in the steps above.

Switching Off

In normal circumstances the power save facility should be used to avoid having to switch the printer off. However if you do wish to switch the printer off manually, please carry out the following procedure:



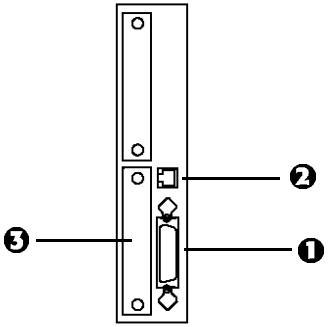
CAUTION!

- ***Never*** **turn the printer off while it is printing.**
- **If the optional hard disk has been installed, *the following procedure must be followed* before turning off to protect any data that is stored on the hard disk.**
- **It is recommended that you follow this shutdown procedure each time the printer is switched off for any reason.**
- **After switching the printer off, wait at least 10 seconds before switching it on again. This allows the internal power levels to drop. Switching on too soon could cause the printer to malfunction.**

1. Press the MENU button until **SHUTDOWN MENU** is displayed, then press the SELECT button.
2. Press the SELECT button again to begin the shutdown sequence.
3. When **PLEASE POWER OFF SHUTDOWN COMPLETED** is displayed, turn the printer off using the power switch.

Interfaces

Your printer is equipped with a selection of data interfaces:



1. **Parallel** – For direct connection to a PC. This port requires a bi-directional (IEEE 1284 compliant) parallel cable.
2. **USB** – For connection to a PC running Windows 98 or above (not Windows 95 upgraded to Windows 98) or Macintosh. This port requires a cable conforming to USB version 1.1 or above.
   - The operation of a printer is not assured if a USB compatible device is connected concurrently with other USB-compatible machines.
   - When connecting multiple printers of the same type, they appear as *****, ***** (2), ***** (3), etc. These numbers depend on the order of connecting or turning on each printer.
3. **Ethernet** – For network cable connection.

NOTE

Administrator's authority is required when installing a network connection.

See your printed *Software Installation Guide* for information on:

- Making the interface connections
- Installing the printer drivers
- Installing network software

Windows XP
Printer Drivers

See your printed *Software Installation Guide* for information on installing printer drivers.

Which Printer Driver to Use?

Your printer comes with Windows drivers for PCL and Adobe® PostScript® (PS). You can install either of these, or both if you wish. Which driver you choose depends on your application.

- If you use TrueType fonts and you do not print PostScript (including ".eps" files) graphics, choose the PCL driver. This will be more efficient and give good results.
- If you use PostScript fonts or you will be printing PostScript graphics, choose the PostScript driver. In this situation performance will be faster and graphics will be printed at their best quality

NOTE

The line art graphics in this manual are PostScript. So if you plan to print parts of this manual choose the PostScript driver. Otherwise the line art graphics will only print at low resolution.

If neither driver seems to cover all your needs, you should install both drivers: select the same printer port (LPT1 or Network Port) for both drivers during the installation.

Set the driver you plan to use most of the time to be your Windows default driver. Most applications allow you to choose a different printer from within the print dialog, so you can print using the alternative driver whenever you need to.

Enabling Installed Options in the Driver

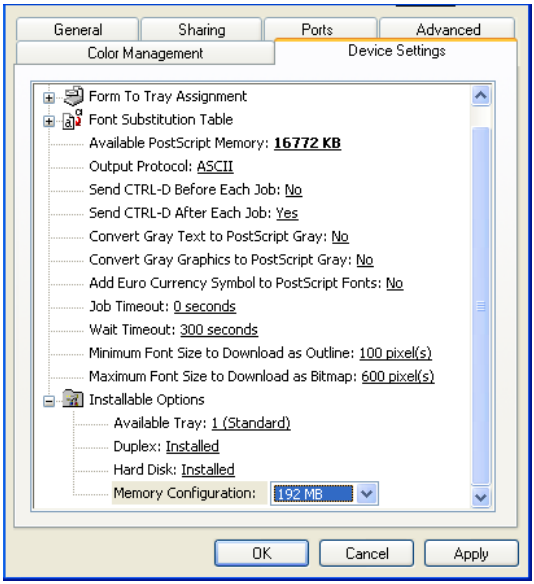
Certain options such as additional memory, the duplexer, or additional trays may be installed in your printer.

Before using the printer, you must enter the printer driver(s) and enable the options. You only need to do this once.

For Additional Memory: PostScript Driver Only

If you have additional memory in your printer, use these instructions to update the Windows PostScript driver so that it recognizes the additional memory:

1. Click **Start** → **Settings** → **Printers and Faxes**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab.
4. Under **Installable Options**, click **Memory Configuration**, then set the memory in the drop-down list to be the same as that now installed in the printer, as shown in the MenuMap (to generate a MenuMap printout, see “Printing the MenuMap” on page 34).

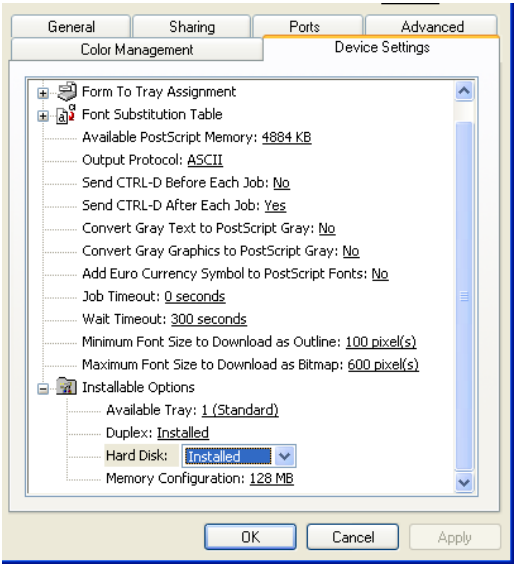


5. Click **OK** and close the Printers and Faxes dialog box.

For the Internal Hard Disk Drive

PostScript Driver

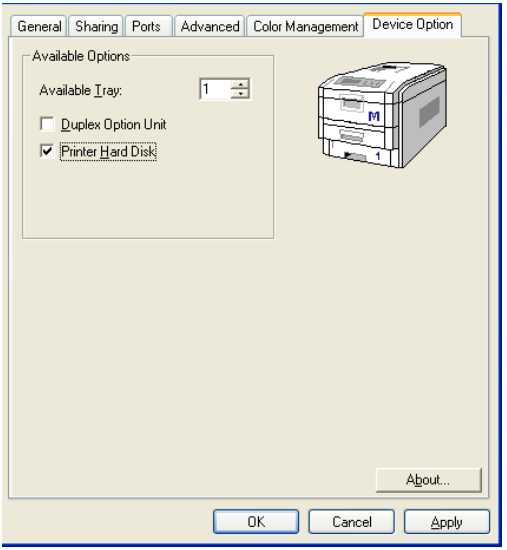
1. Click **Start** → **Settings** → **Printers and Faxes**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab.
4. Under **Installable Options**, make sure the setting in the **Hard Disk** drop-down list is **Installed**.



5. Click **OK** and close the Printers and Faxes dialog box.

PCL Driver

1. Click **Start** → **Settings** → **Printers and Faxes**.
2. Highlight the printer name and click **File** then **Properties**.
3. On the **Device Option** tab, click **Printer Hard Disk**.

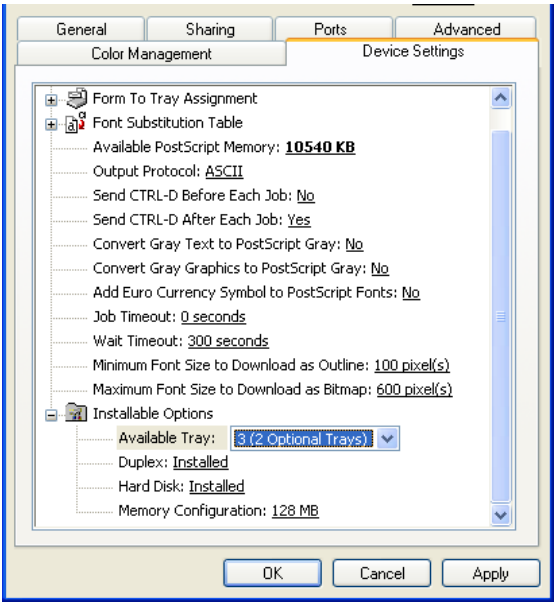


4. Click **OK** and close the Printers and Faxes dialog box.

For Additional Paper Trays

PostScript Driver

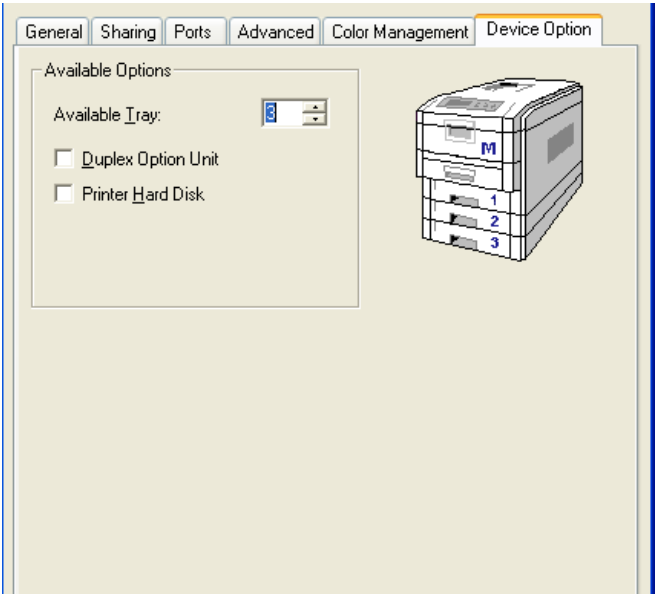
1. Click **Start** → **Settings** → **Printers and Faxes**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab. Under **Installable Options**, click **Available Trays**, then select the appropriate number of trays (not including the Multi-purpose tray) in the drop-down list.



4. Click **OK** and close the Printers and Faxes dialog box.

PCL Driver

1. Click **Start** → **Settings** → **Printers and Faxes**.
2. Highlight the printer name and click **File** then **Properties**.
3. On the **Device Option** tab, select the appropriate number of trays (not including the Multi-purpose tray).

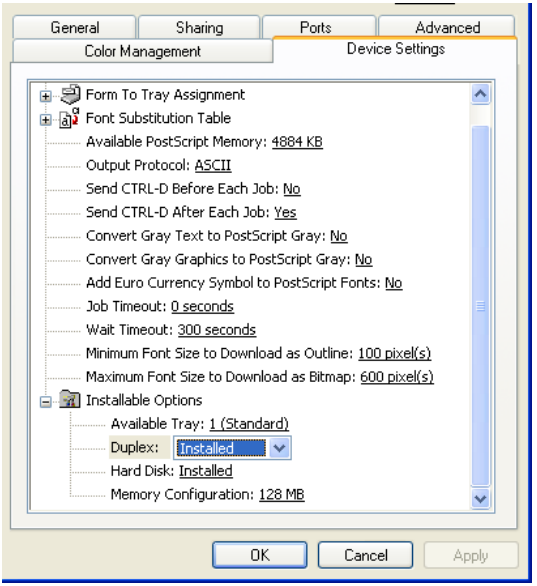


4. Click **OK** and close the Printers and Faxes dialog box.

For the Duplex Unit

PostScript Driver

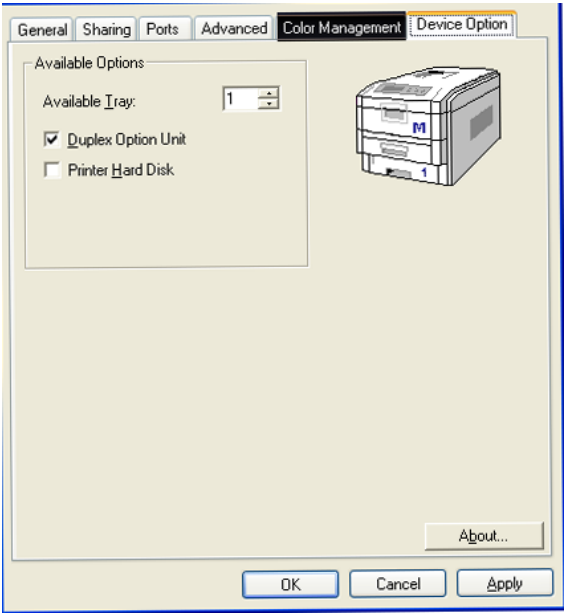
1. Click **Start** → **Settings** → **Printers and Faxes**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab. Under **Installable Options**, click **Duplex** and select **Installed** in the drop-down list.



4. Click **OK** and close the Printers and Faxes dialog box.

PCL Driver

1. Click **Start** → **Settings** → **Printers and Faxes**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Option** tab, click **Duplex Option Unit**.



4. Click **OK** and close the Printers and Faxes dialog box.

Changing Defaults for Paper Feed, Size and Media in the Driver

The normal default for these items is automatic detection.

NOTE

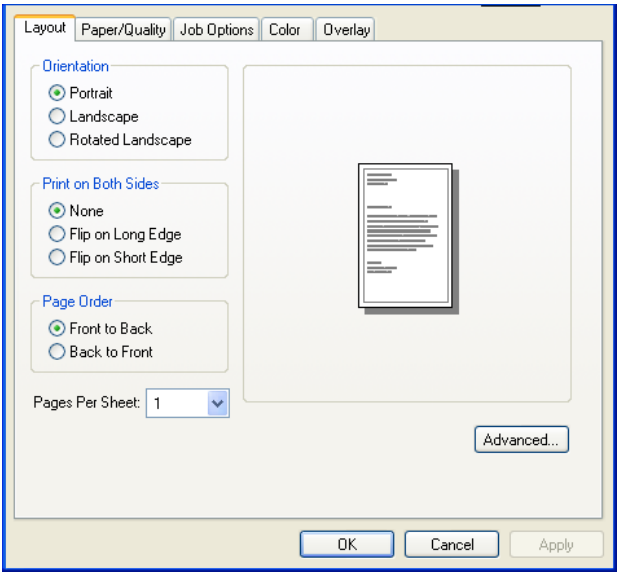
If the defaults set manually in the printer menu differ from those you set in the printer driver, the printer will not print and the LCD will display an error message.

The following printer driver instructions are given as a guide only. Some software applications require the paper feed, size and media settings to be selected from within the software (under Page Setup).

PostScript Drivers

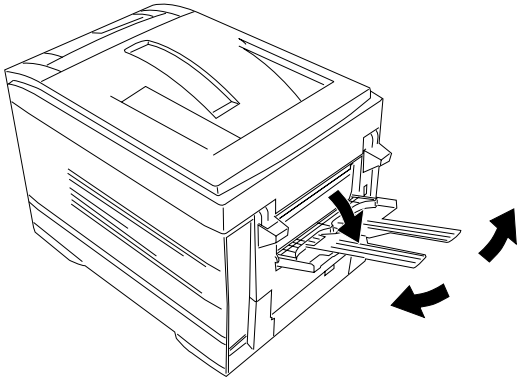
1. Click **Start** → **Settings** → **Printers and Faxes**.

2. Right click the printer name and click **Printing Preferences**.

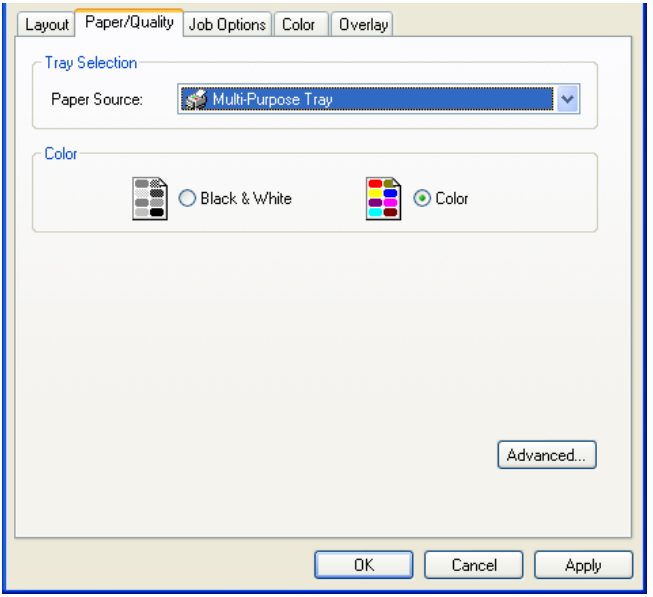


Important!

If you will be using heavy media, transparencies, envelopes or labels, make sure you open the rear exit before printing:

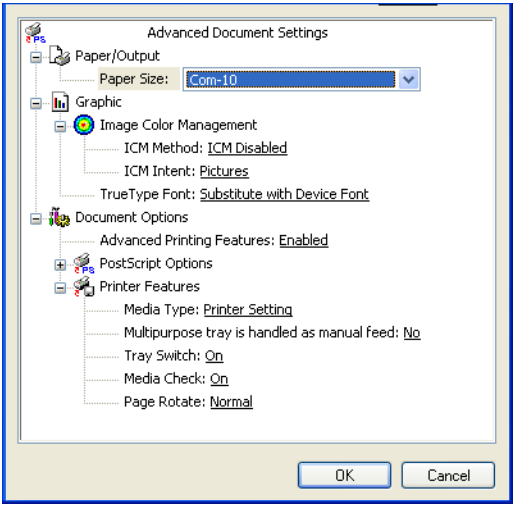


3. Click the **Paper/Quality** tab. Under **Tray Selection**, select the paper feed in the **Paper Source** drop-down list.

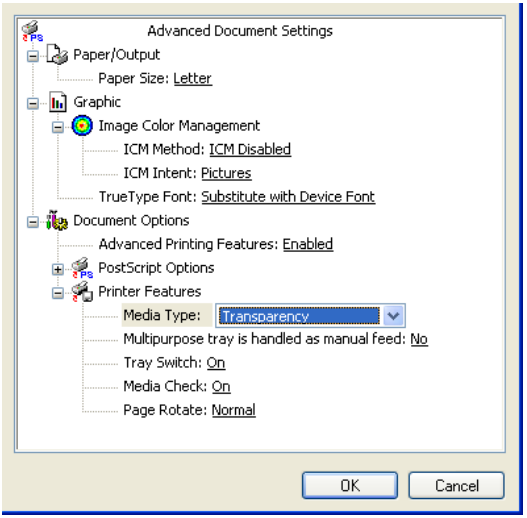


4. Click the **Advanced** button.

5. Under **Paper/Output**, select the media size in the **Paper Size** drop-down list.



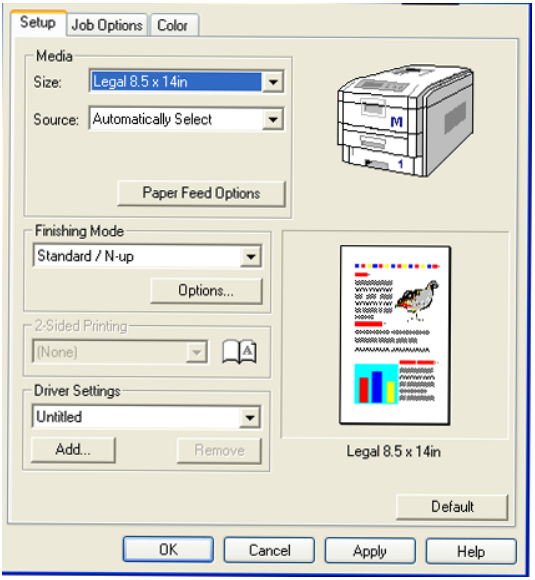
6. Under **Document Options** → **Printer Features**, click **Media Type** and select the media from the drop-down list.



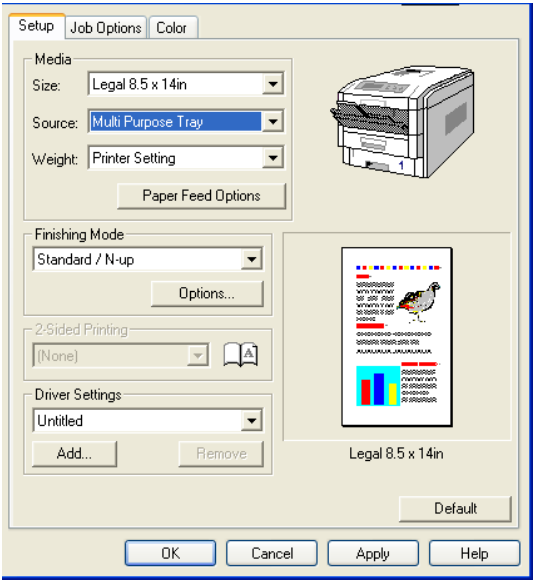
7. Click **OK** twice and close the Printers and Faxes dialog box.

PCL Drivers

1. Click **Start** → **Settings** → **Printers and Faxes**.
2. Right click the printer name and click **Printing Preferences**.
3. On the **Setup** tab, under **Media**, select the required paper size in the **Size** drop-down list.



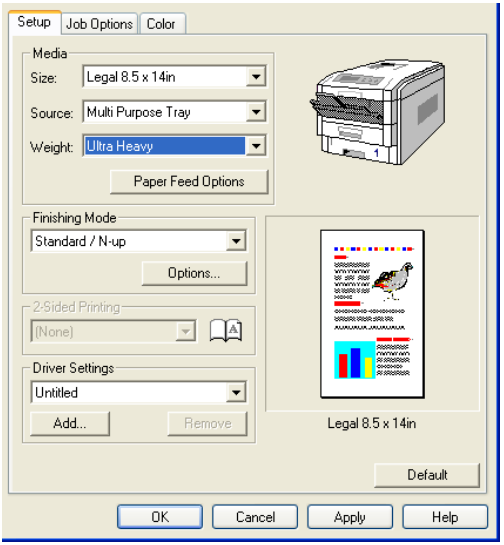
4. Select the required paper feed under **Source**.



NOTE

If a paper tray is selected the Weight field becomes visible.

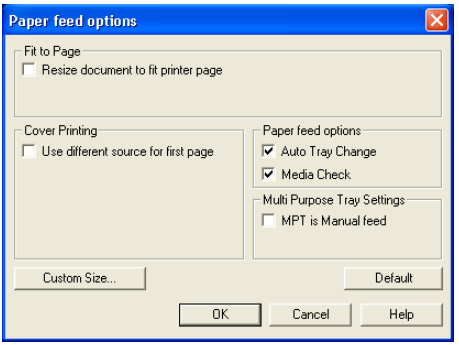
5. Select the required paper type under **Weight**.



NOTE

If Printer Setting is selected, make sure the printer has been set to the correct media type.

6. Click the **Paper Feed Options** button and make any other selections then click **OK**.



7. Click **OK** twice and close the Printers and Faxes dialog box.

Network Printer Status Utility

- Available on TCP/IP network connection only.

The Network Printer Status utility is available if your administrator has installed it. If the utility is installed, you will see the following changes to the printer driver **Properties** dialog box:

- a new **Status** tab is added.
- an **Option** button is added to the **Device Option** tab.

This utility allows you to view (but not change) the status of the following on the **Status** tab:

- paper trays installed and the media assigned to them.
- total size and percentage used of disk/memory.
- percentage of toner remaining.

Important!

If you select **Automatic Status Update** in the **Status** tab, the driver will automatically ping the printer for the latest status information every time you open the **Properties** dialog box. This causes a significant delay until the Properties dialog box opens. To avoid this, use the **Update Status** button in the **Status** tab to manually update the information on demand.

Windows XP Operation

This section explains how to set up color printing and how to use the printer's features including:

- N-up printing (see page 110)
- Custom page sizes (see page 112)
- Selecting print resolution (see page 118)
- Duplex printing (see page 119)
- Watermarks (see page 125)
- Collating (see page 127)
- Proof and Print (see page 128)
- Secure print: printing confidential documents (see page 131)
- Storing files to the hard disk drive (see page 134)
- Printing posters (see page 137)

NOTE

Most applications allow the printer properties to be accessed from within the document print dialog box.

Factors That Affect Color Printing

The PCL and PostScript printer drivers supplied with your printer provide several controls for changing the color output. For general use the default driver settings produce good results for most documents.

Many applications have their own color settings, and these may override the settings in the printer driver. Please refer to the documentation for your software application for details on how that particular program's color management functions.

If you wish to manually adjust the color settings in your printer driver, please be aware that *color reproduction is a complex topic, and there are many factors to take into consideration*. Some of the most important factors are listed below.

Differences between the Range of Colors a Monitor or Printer Can Reproduce

- Neither a printer nor a monitor is capable of reproducing the full range of colors visible to the human eye. Each device is restricted to a certain range of colors. In addition to this, a printer cannot reproduce all of the colors displayed on a monitor, and vice versa.
- Both devices use very different technologies to represent color. A monitor uses Red, Green and Blue (RGB) phosphors (or LCDs), a printer uses Cyan, Magenta, Yellow and Black (CMYK) toner or ink.
- A monitor can display very vivid colors such as intense reds and blues and these cannot be easily produced on any printer using toner or ink. Similarly, there are certain colors, (some yellows for example), that can be printed, but cannot be displayed accurately on a monitor. This disparity between monitors and printers is often the main reason that printed colors do not match the colors displayed on screen.

Viewing Conditions

A document can look very different under various lighting conditions. For example, the colors may look different when viewed standing next to a sunlit window, compared to how they look under standard office fluorescent lighting.

Printer Driver Color Settings

The driver settings for Manual color can change the appearance of a document. There are several options available to help match the printed colors with those displayed on screen. These options are explained in subsequent sections of this User Manual.

Monitor Settings

The brightness and contrast controls on your monitor can change how your document looks on-screen. Additionally, your monitor color temperature influences how "warm" or "cool" the colors look.

NOTE

Several of the Color Matching options make reference to your monitor's Color Temperature. Many modern monitors allow the color temperature to be adjusted using the monitor's control panel.

There are several settings found on a typical monitor:

- **5000k***
  Warmest; yellowish lighting, typically used in graphics arts environments.
- **6500k**
  Cooler; approximates daylight conditions.
- **9300k**
  Cool; the default setting for many monitors and television sets.

*k = degrees Kelvin, a measurement of temperature

How Your Software Application Displays Color

Some graphics applications such as CorelDRAW® or Adobe® Photoshop® may display color differently from "office" applications such as Microsoft® Word. Please see your application's online help or user manual for more information.

Paper Type

The type of paper used can also significantly affect the printed color. For example, a printout on recycled paper can look duller than one on specially formulated glossy paper.

Choosing a Color Matching Method

There is no one way to achieve a good match between the document displayed on your monitor, and its printed equivalent. There are many factors involved in achieving accurate and reproducible color.

However, the following guidelines may help in achieving good color output from your printer. There are several suggested methods, depending on the type of document you are printing.

NOTE

These suggestions are for guidance only. Your results may vary depending on the application from which you are printing. Some applications will override any color matching settings in the printer driver without warning.

RGB or CMYK?

The guidelines for choosing a color matching method makes distinctions between Red, Green, Blue (RGB) and Cyan, Magenta, Yellow, Black (CMYK).

Generally, most documents you print will be in RGB format. This is the most common, and, if you do not know your document's color mode, assume that it is RGB.

Typically CMYK documents are only supported in professional Desktop Publishing and Graphics applications.

Matching Photographic Images

RGB Only

Sharp Color Matching (see page 102) is a generally a good choice. Select a matching method appropriate to your monitor.

RGB or CMYK

If you are printing photographic images from a graphics application such as Adobe Photoshop, you may be able to use Soft-Proofing to simulate the printed image on your monitor. To do this, you can use the ICC-Profiles provided by Sharp (see “Windows ICM Color Matching” on page 109), and then print using the ICC profiles as the Print Space (or Output space).

Matching Specific Colors (e.g., a Company logo)

RGB Only

- Sharp Color Matching (see page 102), and the sRGB setting: PCL or PS driver.
- PostScript Color Matching using the Absolute Colorimetric option (see page 104).
- Use the Color Swatch Utility to print out a chart of RGB swatches and enter your desired RGB values in your application's color picker—PS only (see page 101).

RGB or CMYK

- If you are printing from a graphics application such as Adobe Photoshop, you may be able to use Soft-Proofing to simulate the printed image on your monitor. To do this, you can use the ICC-Profiles provided by Sharp (see “Windows ICM Color Matching” on page 109), and then print using the ICC profiles as the Print Space (or Output space) (PS only).
- Alternatively, use PostScript Color Matching with the Absolute Colorimetric setting (see page 104).

Printing Vivid Colors

RGB Only

- Use Sharp Color Matching (see page 102), with the Monitor 6500k Vivid, sRGB or Digital Camera settings (PCL or PS).

RGB or CMYK

- Use PostScript Color Matching (see page 104) with the Saturation option.

Color Matching: PCL Driver

Color Matching Options

The Color Matching options in the PCL driver can be used to help match your printed colors to the ones displayed on your monitor.

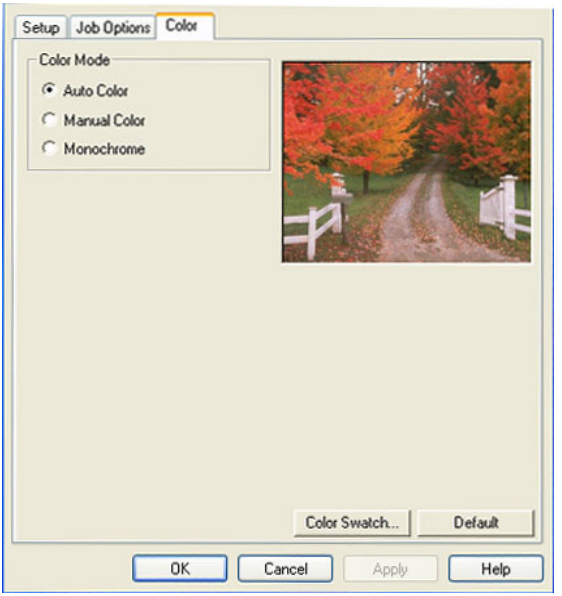
NOTE

The PCL driver's color options are only designed to work with RGB data.

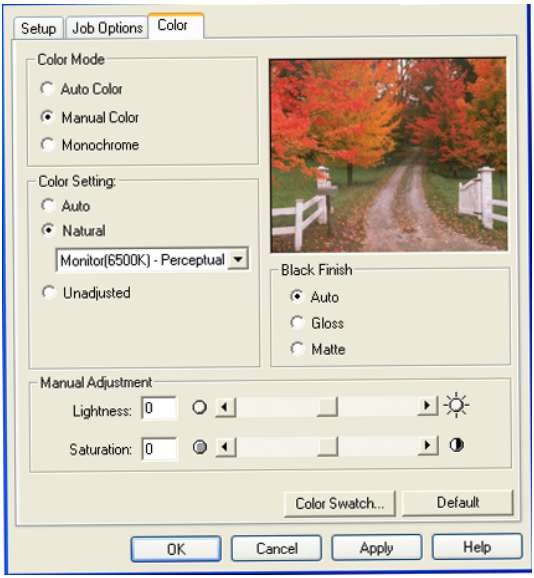
If you are printing CMYK data, we recommend you use the PostScript driver.

To manually set the color matching options in the PCL driver:

1. Click **Start** → **Settings** → **Printers and Faxes.**
2. Right click the appropriate printer name and click **Printing Preferences**.
3. Click the **Color** tab.



a. Click **Manual Color** under **Color Mode**, then click **Natural** under **Color Setting**.



4. Select the method you wish to use:

Monitor (6500k) Perceptual
Optimized for printing photographs when using a monitor with a color temperature of 6500K.

Monitor (6500k) Vivid
Optimized for printing bright colors when using a monitor with a color temperature of 6500K. Ideal for office graphics.

Monitor (9300k)
Optimized for printing photographs when using a monitor with a color temperature of 9300K.

Digital Camera
Optimized for printing photographs taken with a digital camera. This tends to produce prints with lighter and brighter colors. For some photographs, other settings may be better depending on the subjects and the conditions under which they were taken.

sRGB
Optimized for matching specific colors, such as a company logo color. The colors within the printer's color gamut are printed

without any modification, and only colors that fall outside the printable colors are modified.

5. Set any other required parameters using the on-line Help for guidance.
6. When you are done, click **OK** and close the Printing Preferences dialog box.

The Print Color Swatch Utility

For use with applications which allow you to set your own RGB values for colors.

The Color Swatch utility prints out charts of sample colors. Listed below each color are the corresponding RGB (Red, Green, Blue) values to use in your application to match that printed color.

An example of using the Print Color Swatch function:

You wish to print a logo in a particular shade of red. The steps you would follow are:

1. Click **Start** → **Settings** → **Printers and Faxes.**
2. Right click the printer name and click **Printing Preferences**.
3. Click the **Color** tab.
4. Click the **Color Swatch** button to print the color swatch samples.
5. Select the shade of red that best suits your needs and make a note of the RGB value below that particular shade.
6. Using your program's color picker, enter these same RGB values (from step 5), and change the logo to that color.

NOTE

The RGB color displayed on your monitor may not necessarily match what was printed on the color swatch. If this is the case, it is probably due to the difference between how your monitor and printer reproduce color.

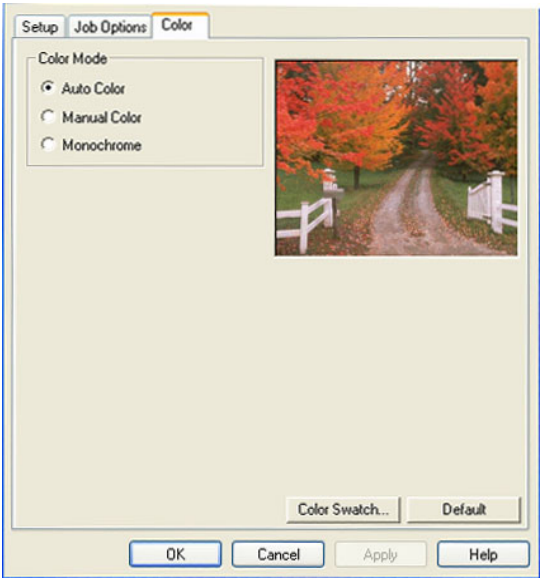
Color Matching: PostScript driver

Color Matching Options

The PostScript driver offers several different methods of controlling the color output of the printer.

To manually set the color matching options in the PostScript driver:

1. Click **Start** → **Settings** → **Printers and Faxes.**
2. Right click the printer name and click **Printing Preferences**.
3. Click the **Color** tab.

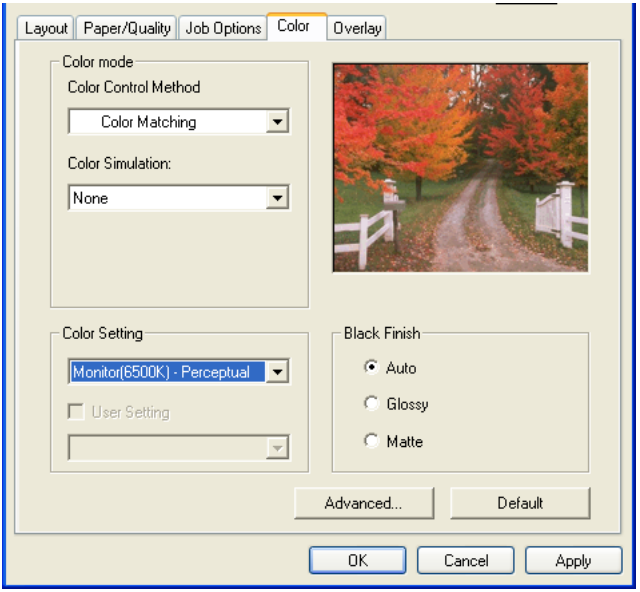


4. Select the method to use from the **Color Control Method** drop-down list under **Color Mode**:

   a. **Color Control = Sharp Color Matching**

      This is Sharp's proprietary color matching system, and affects *RGB data only*.

Select the type to be used from the drop-down list under **Color Setting** :



- **Monitor (6500k) Auto**
  Optimized for printing general documents when using a monitor with a color temperature of 6500K.
- **Monitor (6500k) Perceptual**
  Optimized for printing photographs when using a monitor with a color temperature of 6500K.
- **Monitor (6500k) Vivid**
  Optimized for printing bright colors when using a monitor with a color temperature of 6500K. Ideal for office graphics and text.
- **Monitor (9300k)**
  Optimized for printing photographs when using a monitor with a color temperature of 6500K.
- **Digital Camera**
  Optimized for printing photographs taken with a digital camera. This tends to produce prints with lighter and brighter colors. For some photographs, other settings may be better depending on the subjects and the conditions under which they were taken.

- **sRGB**

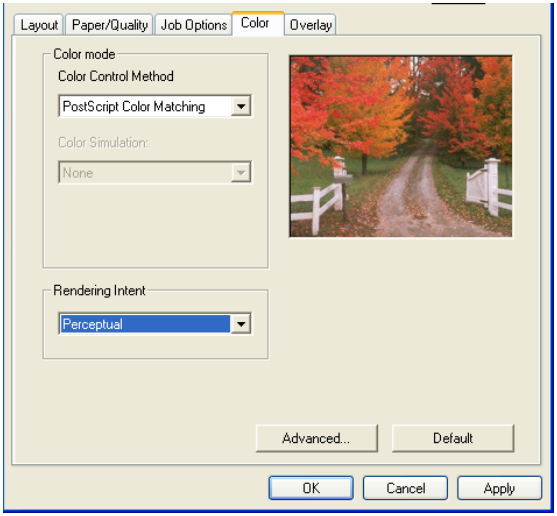
  Optimized for matching specific colors, such as a company logo color.

  The colors within the printer's color gamut are printed without any modification, and only colors that fall outside the printable colors are modified.

b. Color Control = PostScript Color Matching

This uses PostScript Color Rendering Dictionaries built into the printer, and affects both RGB and CMYK data.

Select the rendering type from the **Rendering Intent** drop-down list.



- **Rendering Intents**

  When a document is printed, a conversion takes place from the document's color space to the printer color space. The rendering intents are essentially a set of rules that determine how this color conversion takes place.

  The rendering intents that the printer driver provides are listed below:

– *Auto*

  Best choice for printing general documents.

– *Perceptual*

Best choice for printing photographs. Compresses the source gamut into the printer's gamut while maintaining the overall appearance of an image.

– *Saturation*

Best choice for printing bright and saturated colors if you don't necessarily care how accurate the colors are. This makes it the recommended choice for graphs, charts, diagrams etc. Maps fully saturated colors in the source gamut to fully saturated colors in the printer's gamut.

– *Relative Colorimetric*

Good for proofing CMYK color images on a desktop printer. Much like Absolute Colorimetric, except that it scales the source white to the (usually) paper white; i.e. unlike Absolute Colorimetric, this attempts to take the paper white into account.

– *Absolute Colorimetric*

Best for printing solid colors and tints, such as Company logos etc. Matches colors common to both devices exactly, and clips the out of gamut colors to their nearest printed equivalent. Tries to print white as it appears on screen. The white of a monitor is often very different from paper white, so this may result in color casts, especially in the lighter areas of an image.

c. Color Control = Using ICC Profile

This option provides a method of matching RGB colors similar to Windows ICM matching. See “Using the ICC Profiles Feature: PostScript Driver Only” on page 106.

d. Color Control = No Color Matching

Use this option to switch off all printer color matching.

e. Color Control = Print in Grayscale

This option prints all documents as monochrome.

Using the ICC Profiles Feature: PostScript Driver Only

- Affects **RGB data only**.

This provides a method of matching RGB colors similar to Windows ICM matching. The main advantage it has over Windows ICM color matching is that it provides a method of printing using both input and output profiles. Windows ICM matching only allows output profiles to be chosen.

Input Profiles (e.g., a digital camera) provide information about the color in the original device that was used to capture or display the image data. For example, an input device could be a scanner, digital camera, or monitor.

Output Profiles (e.g., the printer) provide information about the device to which you are printing.

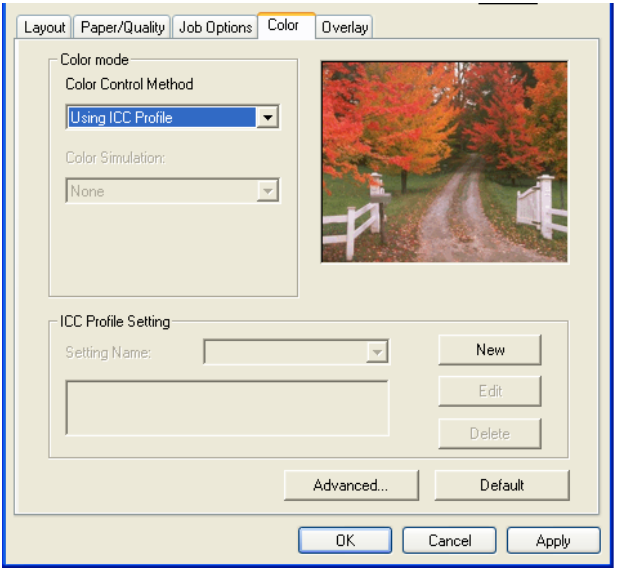
The Using ICC Profiles feature uses both the input and output profiles to generate a CRD (Color Rendering Dictionary), which is used to match the colors as closely as possible.

NOTE

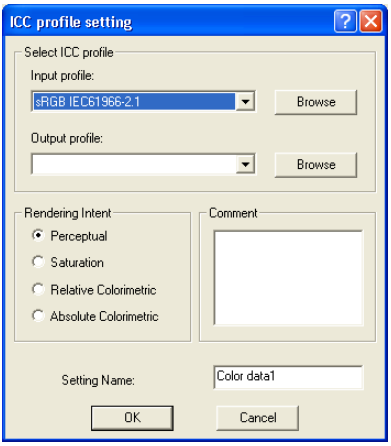
This feature may not work for all application programs. However, many professional graphics applications offer a similar feature in their print settings, with the ability to choose a source (input) color space, and a print (output) color space

To Set Up ICC Profiles:

1. Click **Start** → **Settings** → **Printers and Faxes.**
2. Right click the printer name and click **Printing Preferences**.
3. Click the **Color** tab.
4. Under **Color mode**, select **Using ICC Profile** in the **Color Control Method** drop-down list.



5. Click the **New** button.



6. Select the **Input profile** and **Output profile** in the drop-down lists under **Select ICC profile**.
7. Select the desired **Rendering Intent** and type in a name for the profile and click **OK**. The new name will appear in the **Setting Name** drop-down list under **ICC Profile Setting**.
8. Repeat steps 5-7 for each ICC profile you wish to define.
9. Click **OK** and close the Printers and Faxes dialog box.

Windows ICM Color Matching

- ICM is the color management system built into Windows.
- Affects **RGB data only**.
- Can be associated with either the PCL or PS driver

Windows ICM uses ICC profiles for your monitor and printer; these profiles describe the colors that your device is capable of reproducing. ICC profiles can be associated with your printer via the **Color Management** tab of the printer driver.

Depending on how you have installed the printer driver, the color profiles may already be associated with the driver.

To associate ICC Color Profiles with the printer driver:

1. Click **Start** → **Settings** → **Printers and Faxes.**
2. Highlight the printer name and click **File**, then **Properties**.
3. Click the **Color Management** tab.
4. Under "**Color Profiles currently associated with this printer**" you should see the names of profiles that match your printer model. If you do not see any profiles associated with the driver, click "**Add…**" and locate the ICC profiles for your printer.

Windows ICM uses the information in these profiles to convert colors in your documents to colors that the printer can reproduce. The way in which this conversion is performed can be controlled via the ICM Intent control in the printer driver

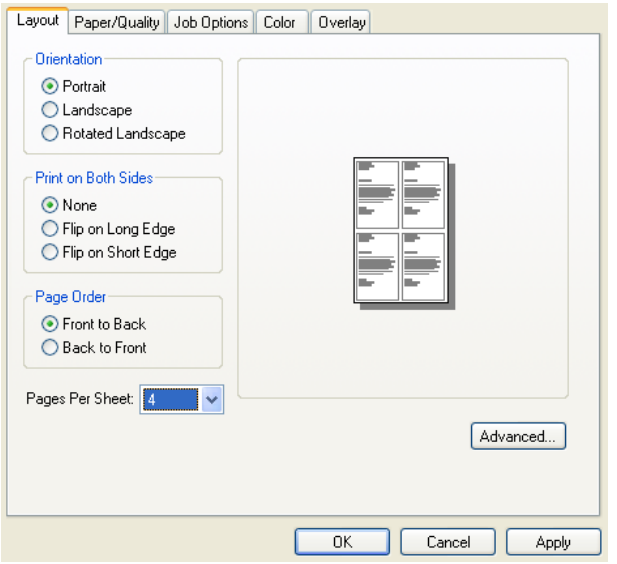
NOTE

The Color Match "Using ICC Profiles" feature provides an alternative to Windows ICM. This feature is similar to Windows ICM, but offers several additional features.

Printing Multiple Pages on One Sheet (N-up Printing)

N-Up Printing Using the PostScript Driver

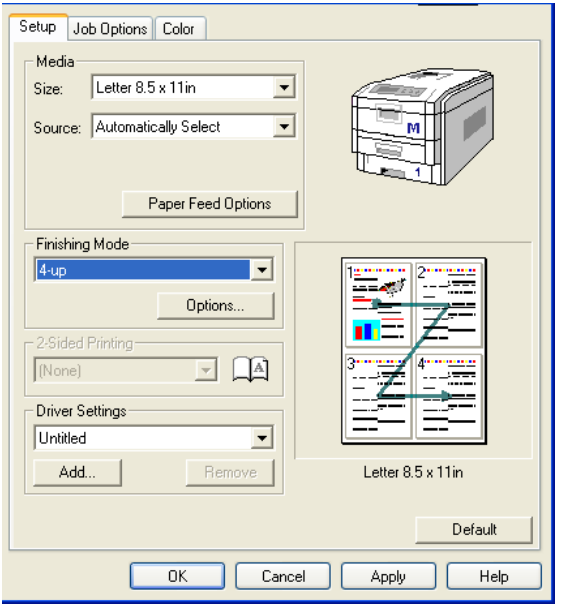
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate PS driver on the **General** tab, then click the **Preferences** button.
3. On the **Layout** tab, under **Pages Per Sheet**, select the required number of pages.



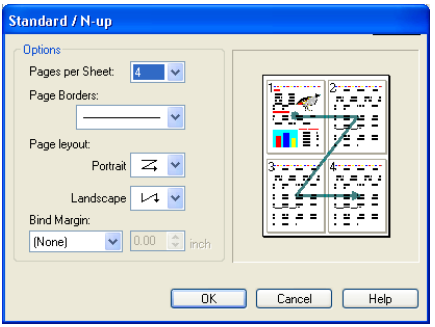
4. Click **OK**, then click **Print**.

N-Up Printing Using the PCL Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate PCL driver on the **General** tab, then click the **Preferences** button.
3. On the **Setup** tab, under **Finishing Mode**, select the required number of pages per sheet.



4. Click the **Options** button and select the **Page Borders**, **Page Layout** and **Bind Margin**, then click **OK**.



5. Click **OK**, then click **Print**.

Printing Custom Page Sizes

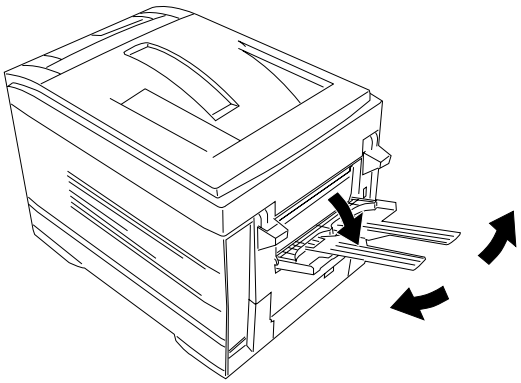
Custom page sizes can only be printed from the multi purpose tray. The printer media size for the multi purpose tray must be manually set in the driver to the custom paper size before use (range 3½ to 8½ inches [89 to 216 mm] wide x 5 to 14 inches [127 to 356 mm] long).

Printing Custom Pages Using the PostScript Driver

NOTE

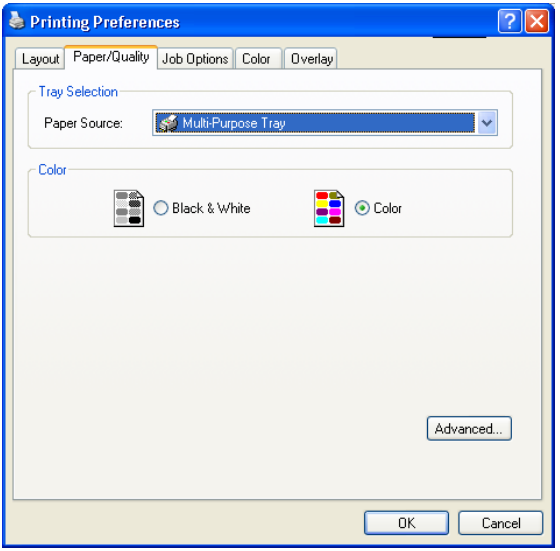
One custom paper size can be defined in the PostScript driver.

1. Make sure the rear exit path is open:

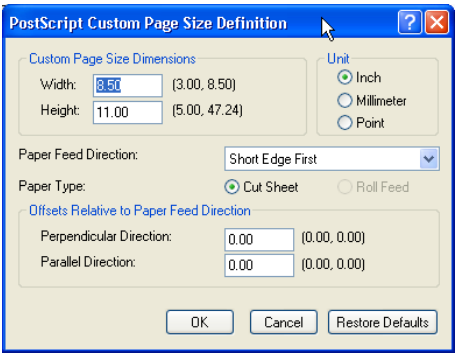


2. Open the file in your application and select **File** → **Print**.
3. In the Print dialog box, click the PS driver on the **General** tab, then click the **Preferences** button.

4. Click the **Paper/Quality** tab. Under **Tray Selection**, select **Multi-Purpose Tray** in the **Paper Source** drop-down list.



5. Click the **Advanced** button. Under **Paper/Output**, select **Postscript Custom page Size** in the **Paper Size** drop-down list.



6. Enter the **Width** and **Height** for the custom paper and select the **Paper Feed Direction**.

NOTE

- **Long Edge First = media feeds in long edge first**
- **Short Edge First = media feeds in short edge first**
- **Long Edge First (flipped) = Reserved for future use.**
- **Short Edge First (flipped) = Reserved for future use.**

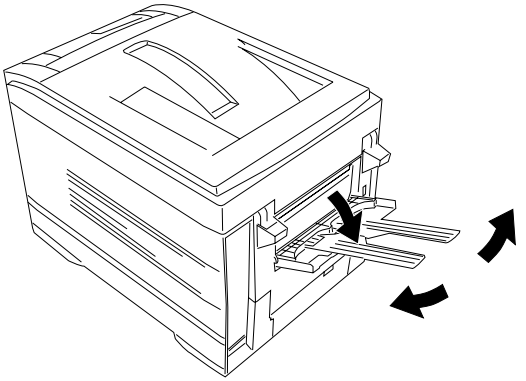
7. Click **OK** three times.
8. Click **Print**.

Printing Custom Pages Using the PCL Driver

NOTE

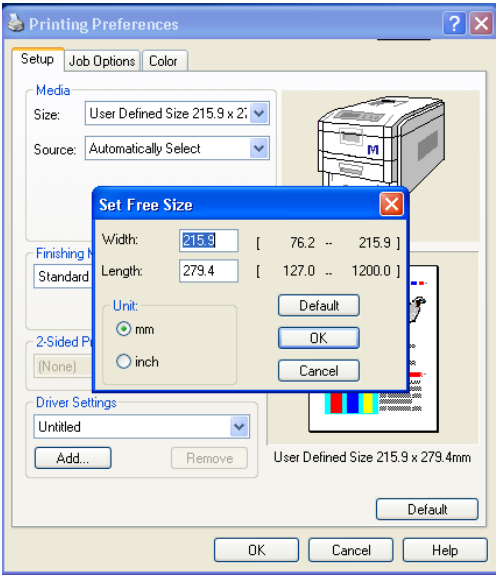
Up to 32 custom page sizes can be defined in the PCL driver.

1. Make sure the rear exit path is open:



2. Open the file in your application and select **File** → **Print**.
3. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Preferences** button.

4. On the **Setup** tab, under **Media**, select **User Defined Size** in the **Size** drop-down list.
   The Set Free Size dialog box appears..



NOTE

You may see a Warning dialog box indicating a conflict. If you do, click OK and the driver will automatically make the needed changes to correct for the conflict.

5. Select the **Unit**, then enter the **Width** and **Length** measurements and click **OK**.

6. **User Defined Size** appears in the **Size** list on the **Setup** tab.

NOTE

To save the setting for future use:

- **Click Paper Feed Options, then click Custom Size.**
- **Select the unit, then enter the relevant information for Width and Height and give your custom size a name under Name.**
- **Click Add.**
- **Click OK.**
  The Custom Page Size is added to the bottom of the Paper Size list.

7. Click **OK**, then click **Print**.

Changing the Resolution for a Print Job

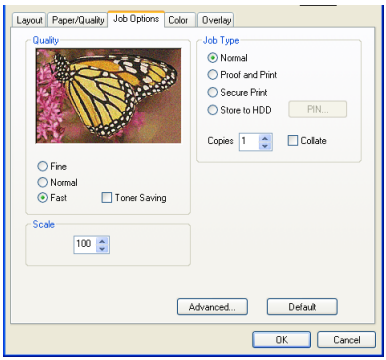
NOTE

These instructions explain how to change the settings as you are printing a job. If you wish to change the settings to apply to all jobs (default settings):

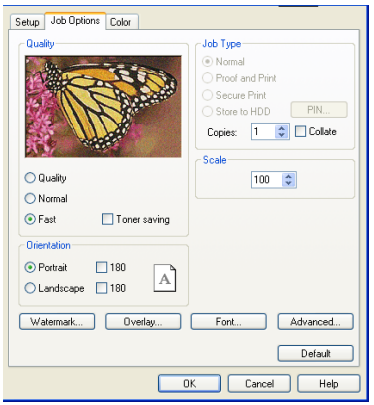
- **Click Start → Settings → Printers and Faxes.**
- **Right click the appropriate printer name, then select Properties.**
- **Follow steps 3, etc., below. Note that the Properties screen for setting defaults will have more tabs.**

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate driver on the **General** tab, then click the **Preferences** button.
1. Click the **Job Options** tab.
2. Select the required printing resolution under **Quality**.

PostScript Driver



PCL Driver



3. Select **Toner Saving** if appropriate.
4. Click **OK**, then click **Print**.

Duplex Printing
(Printing on Both Sides of the Paper)

NOTE

The optional duplex unit must be installed in the printer and enabled before duplex printing can be carried out.

- Standard paper sizes only.
- Paper weight range 20 to 28 lb. US Bond (75 to 105 g/m^2).
- Paper must be loaded print side *up*.
- Only Tray 1, optional Trays 2 and 3, and the High Capacity Feeder trays can be used for duplex printing. The MP tray *cannot* be used for duplex printing.

NOTE

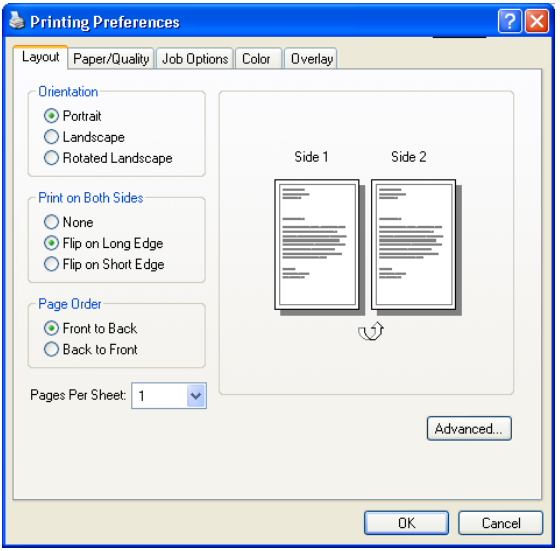
These instructions explain how to change the settings as you are printing a job. If you wish to change the settings to apply to all jobs:

- **Click Start → Settings → Printers and Faxes.**
- **Right click the appropriate printer name, then select Properties.**
- **Follow steps 3, etc., below. Note that the Properties screen for setting defaults will have more tabs.**

Duplex Printing Using the PostScript Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PS driver on the **General** tab, then click the **Preferences** button.

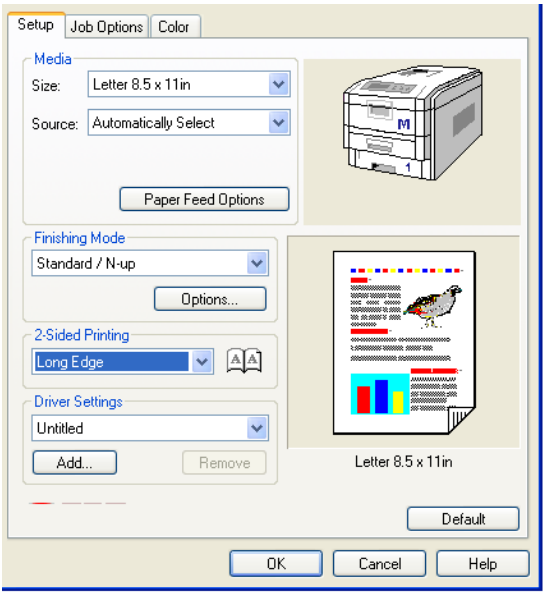
3. On the **Layout** tab, under **Print on Both Sides**, select **Flip on Long Edge** or **Flip on Short Edge**.



4. Click **OK**, then click **Print**.

Duplex Printing Using the PCL Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Preferences** button.
3. On the **Setup** tab, under **2-Sided Printing**, select **Long Edge** or **Short Edge**.



4. Click **OK**, then click **Print**.

Printing Booklets

NOTES

- **You must have the duplex unit installed and enabled in order to print booklets.**
- **Not available on some network connections: see the Help file.**
- **Some software applications may not support booklet printing.**
- **The right-to-left setting allows a booklet to be printed for right to left reading, which is used in some languages.**

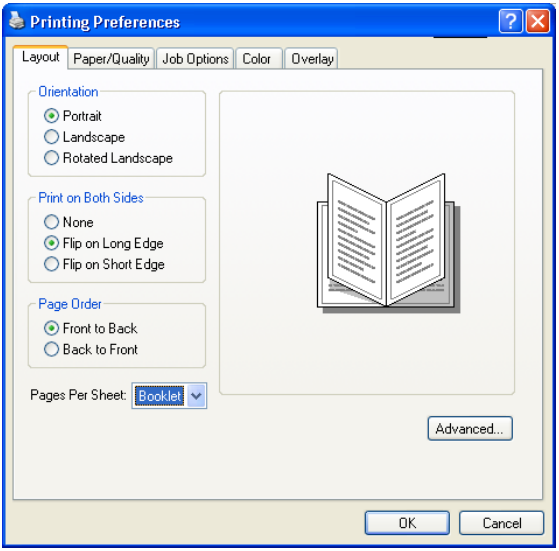
Printing Booklets Using the PostScript Driver

NOTE

Booklet printing using the PostScript driver is restricted to 2 pages per sheet (e.g., print a 5½ x 8½ inch booklet on 8½ x 11 inch paper or print an 8½ x 11 inch booklet on 11 x 17 inch paper).

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PS driver on the **General** tab, then click the **Preferences** button.

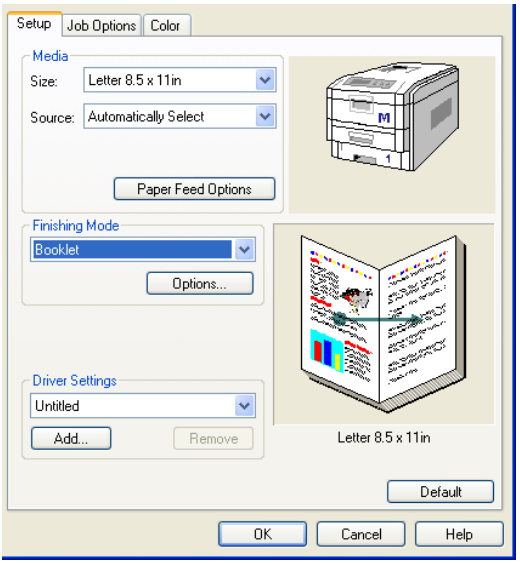
3. On the **Layout** tab, under **Pages Per Sheet**, select **Booklet** in the drop-down list.



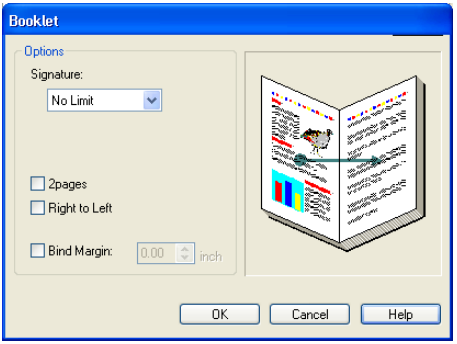
4. Click **OK**, then click **Print**.

Printing Booklets Using the PCL Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Preferences** button.
3. On the **Setup** tab, under **Finishing Mode**, select **Booklet** in the drop-down list.



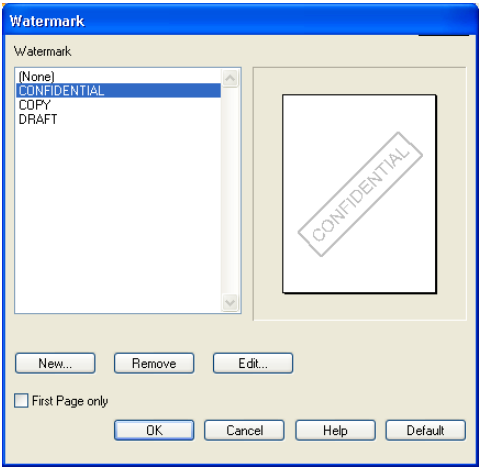
4. Click the **Options** button, then set the **Signature**, **2pages**, etc. (see the on-line Help for information), and click **OK**.



5. Click **OK**, then click **Print**.

Printing Watermarks: PCL Driver Only

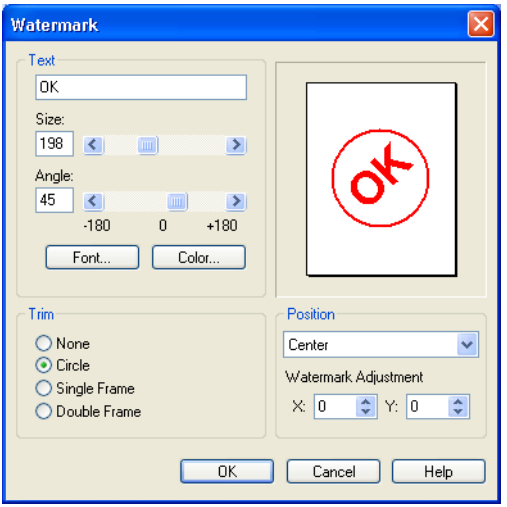
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Preferences** button.
3. On the **Job Options** tab, click **Watermark**.
4. Select a name from the **Watermark** list.



NOTE

To create a new watermark or edit an existing watermark:

- **Click the New or Edit button.**



- **Enter the text for the watermark and select the font, size, angle, etc., to be used.**
- **Click OK.**
  The new watermark appears in the Watermark list.

5. If you wish to print the watermark only on the first page of the document, select **First Page only**.
6. Click **OK** twice.
7. Click **Print**.

Collating

Collating can be carried out with or without a hard disk drive installed. However, printers with a hard disk drive will provide greater performance.

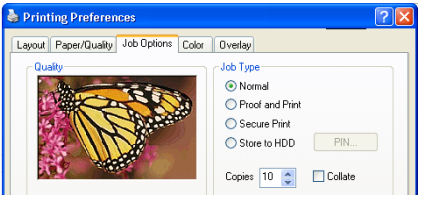
Important

If your software application has a collate option, use it instead of the collate option in the printer driver.

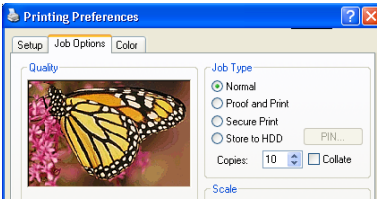
The following instructions explain how to select collating using the printer driver.

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate driver on the **General** tab, then click the **Preferences** button.
3. On the **Job Options** tab, under **Job Type**, enter the number of copies required and—*only if the application has no collate option*—select **Collate**.

PostScript Driver



PCL Driver



4. Click **OK**, then click **Print**.

Proof and Print

Proof and print allows printing of a single copy of a document for checking before printing multiple copies of the same document.

NOTES

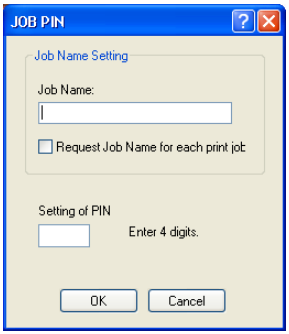
- **The internal hard disk must be installed in the printer and enabled, to allow for spooling of the print job before final printing.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy is printed.**
- **If the software application being used has a collate print option, it must be turned OFF for proof and print to operate correctly.**
- **Proof and print may not be available in some software applications.**

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate driver on the **General** tab, then click the **Preferences** button.

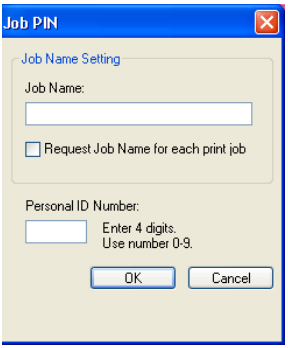
3. Under **Job Type**, select **Proof and Print**.

   a. Enter a job name of up to 16 characters under **Job Name Setting** and, if required, select **Request Job Name for each print job**.

PostScript Driver



PCL Driver

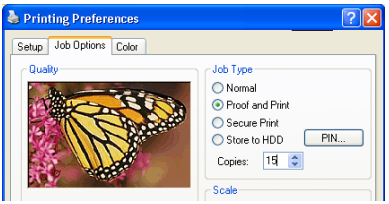


   b. Type in a four digit personal ID number from 0000 to 7777, then click **OK**

4. Enter the number of copies and, if required, select **Collate** (Post Script driver only).

PostScript Driver

PCL Driver



5. Click **OK**, then click **Print**. The document is stored on the hard disk drive, and one copy is printed for checking.

6. After checking the proof, print or delete (if incorrect) the remaining copies of the document using the procedures given below.

Printing Copies

1. Press the MENU button to access the **PRINT JOBS MENU**, then press the SELECT button.
2. Enter your personal ID number using the buttons on the printer control panel.
3. Press the VALUE button until **ALL JOBS** or the required job name is displayed.
4. Press the SELECT button to print the remaining copies of the document.

Deleting Copies

If the proof is not ready for printing, the job must be deleted from the printer:

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter your personal ID number using the buttons on the printer control panel.
3. Press the VALUE button until **ALL JOBS** or the required job name is displayed.
4. Press the CANCEL button to delete the remaining copies of the document.
5. When the deletion confirmation message appears, confirm by pressing the SELECT button.

Secure Printing (Printing Confidential Documents)

Secure printing or printing with passwords allows the printing of confidential documents on printers that are shared with other users.

NOTE

- **The internal hard disk must be installed in the printer and enabled to allow for spooling of the print job before final printing.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy printed.**
- **If the software application being used has a collate print option, this must be turned OFF for secure printing to operate correctly.**
- **Secure printing may not be available in some software applications.**

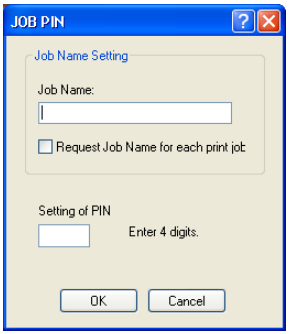
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate driver on the **General** tab, then click the **Preferences** button.
3. Under **Job Type**, select **Secure Print**.

NOTE

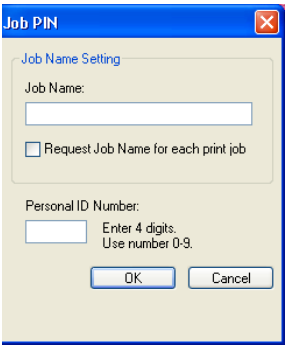
If you've already placed a document on the hard disk drive using Secure Print, but have not yet printed it out, click the PIN button and enter a new job name.

a. Enter a job name of up to 16 characters under **Job Name** and, if required, select **Request Job Name for each print job**.

PostScript Driver



PCL Driver

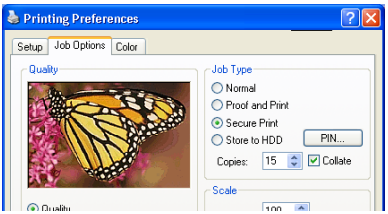


b. Type in a four digit personal ID number from 0000 to 7777, then click **OK**.

4. Enter the number of copies and, if required, select **Collate**.

PostScript Driver

PCL Driver



5. Click **OK**, then click **Print**. The document will be stored on the printer's hard disk.

6. Go to the printer and print out the document using the front panel (see below).

Printing a Confidential Document from the Front Panel

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you set above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the SELECT button.
   The document will print and be deleted from the hard disk drive.

Deleting the Confidential Document Before Printing It

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you set above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the CANCEL button to delete the job from the printer.

Store to Hard Disk

Store to hard disk (job spooling) allows print jobs to be prepared and stored on the hard disk for printing on demand. This is good for forms, generic memos, letterhead stationery, etc.

NOTE

- **The internal hard disk must be installed in the printer and enabled.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy printed.**
- **If the software application being used has a collate print option, this must be turned OFF for Store to Hard Disk to operate correctly.**
- **Store to Hard Disk may not be available in some software applications.**

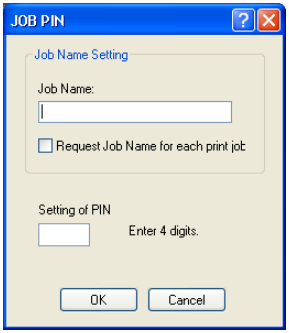
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate driver on the **General** tab, then click the **Preferences** button.
3. On the **Job Options** tab, select **Store to HDD**.

NOTE

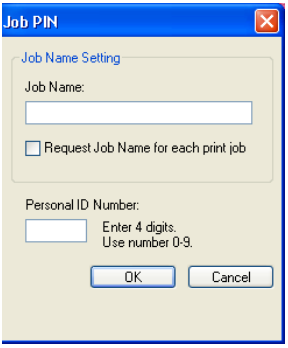
If you've already stored a document on the printer's hard disk drive, and want to store another one, click the PIN button and enter a new Job Name.

a. Enter a job name of up to 16 characters under **Job Name Setting** and, if required, select **Request Job Name for each print job**.

PostScript Driver



PCL Driver



b. Type a four digit personal ID number from 0000 to 7777, then click **OK**.

4. Select the number of **Copies** and click **Collate** if applicable.

PostScript Driver

PCL Driver

5. Click **OK**, then click **Print**. The document will be stored on the hard disk and can then be printed on demand, or deleted, using the procedure below.

To Print a Stored Document

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you selected above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the SELECT button to print the document.

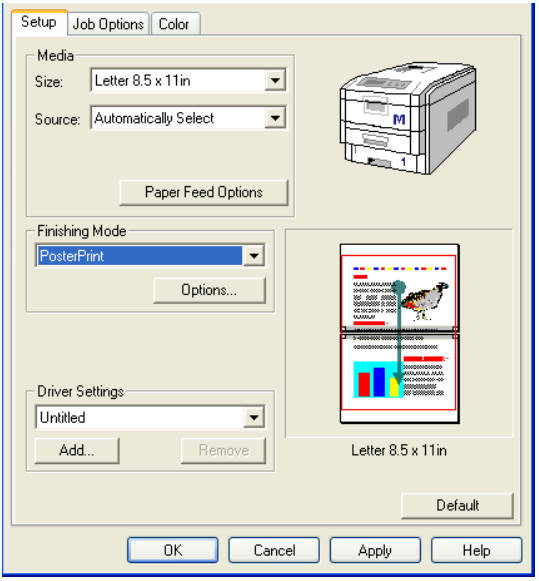
To Delete a Stored Document from the Hard Disk Drive

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you selected above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the CANCEL button to delete the remaining copies of the document.
5. When the deletion confirmation message appears, confirm by pressing the SELECT button.

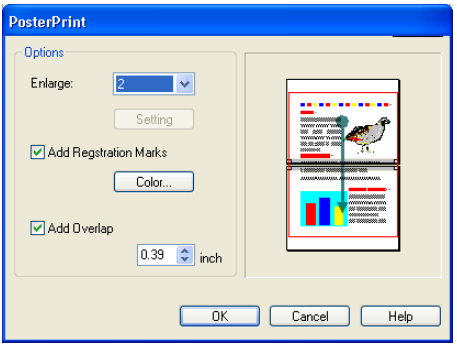
Printing Posters: PCL Driver Only

This option allows you to configure and print posters by breaking up the document page into multiple pieces which print enlarged on separate sheets. Then the separate sheets are combined to produce a poster. It is only available with the PCL printer driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Preferences** button.
3. On the **Setup** tab, under **Finishing Mode**, select **PosterPrint**.



4. Click **Options...** and enter the configuration details



5. Click **OK** twice.
6. Click **Print**.

Windows 2000
Printer Drivers

See your printed *Software Installation Guide* for information on installing printer drivers.

Which Printer Driver to Use?

Your printer comes with Windows drivers for PCL and Adobe® PostScript® (PS). You can install either of these, or both if you wish. Which driver you choose depends on your application.

- If you use TrueType fonts and you do not print PostScript (including ".eps" files) graphics, choose the PCL driver. This will be more efficient and give good results.
- If you use PostScript fonts or you will be printing PostScript graphics, choose the PostScript driver. In this situation performance will be faster and graphics will be printed at their best quality

NOTE

The line art graphics in this manual are PostScript. So if you plan to print parts of this manual choose the PostScript driver. Otherwise the line art graphics will only print at low resolution.

If neither driver seems to cover all your needs, you should install both drivers: select the same printer port (LPT1 or Network Port) for both drivers during the installation.

Set the driver you plan to use most of the time to be your Windows default driver. Most applications allow you to choose a different printer from within the print dialog, so you can print using the alternative driver whenever you need to.

Enabling Installed Options in the Drivers

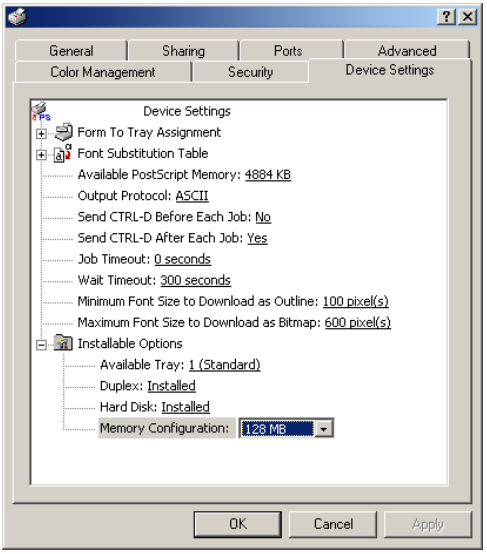
Certain options such as additional memory, the duplexer, or additional trays may be installed in your printer.

Before using the printer, you must enter the printer driver(s) and enable the options. You only need to do this once.

For Additional Memory

If you have additional memory in your printer, use these instructions to update the Windows PostScript driver so that it recognizes the additional memory:

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab.
4. Under **Installable Options**, click **Memory Configuration**, then set the memory in the drop-down list to be the same as that now installed in the printer, as shown in the MenuMap (to generate a MenuMap printout, see “Printing the MenuMap” on page 34.

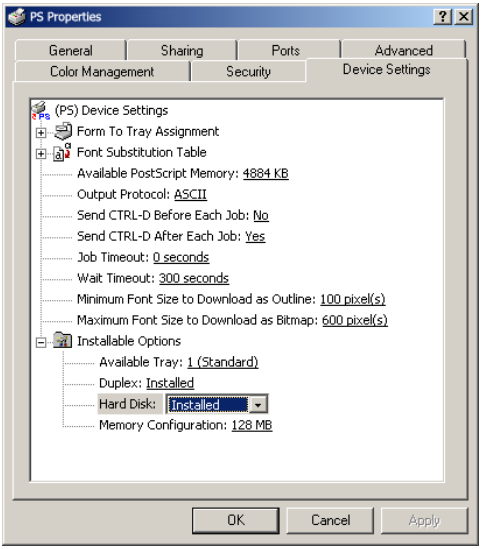


5. Click **OK** and close the Printers dialog box.

For the Internal Hard Disk Drive

PostScript Driver

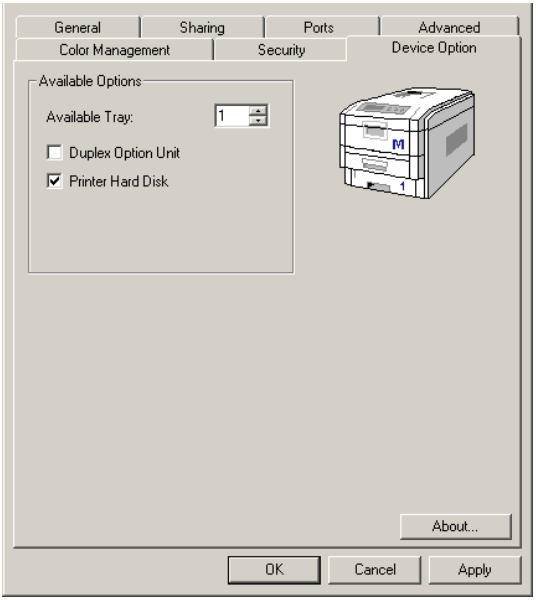
1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab.
4. Under **Installable Options**, make sure **Hard Disk** is set to **Installed**.



5. Click **OK** and close the Printers dialog box.

PCL Driver

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. On the **Device Option** tab, click **Printer Hard Disk**.

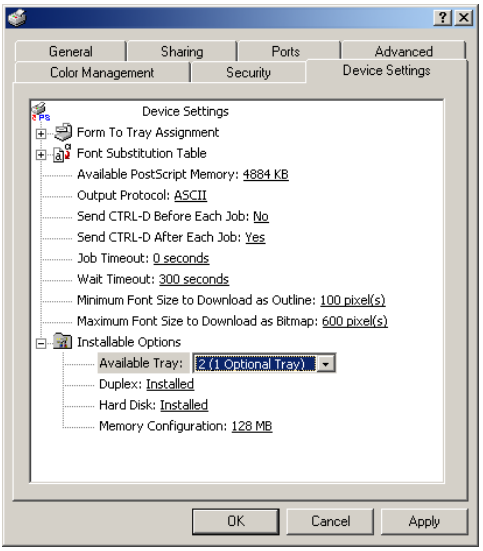


4. Click **OK** and close the Printers dialog box.

For Additional Paper Trays

PostScript Driver

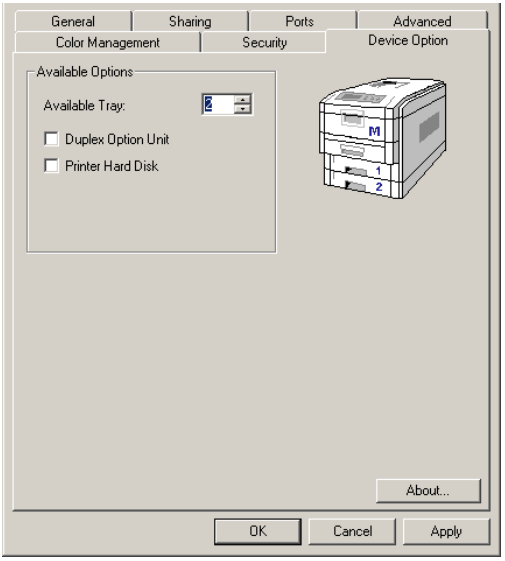
1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab. Under **Installable Options**, click **Available Trays**, then select the appropriate number of trays (not including the Multi Purpose tray) in the drop-down list.



4. Click **OK** and close the Printers dialog box.

PCL Driver

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. On the **Device Option** tab, select the appropriate number of trays (not including the Multi Purpose tray).

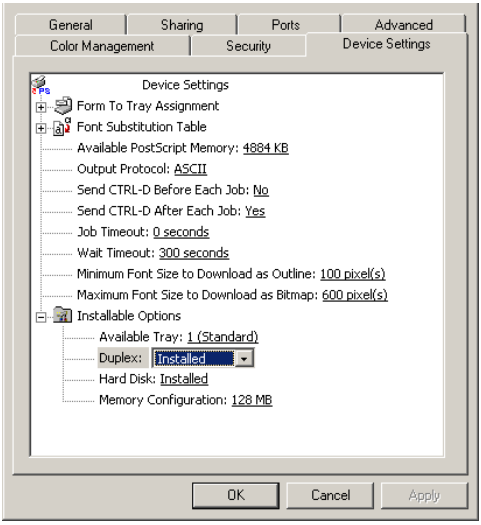


4. Click **OK** and close the Printers dialog box.

For the Duplex Unit

PostScript Driver

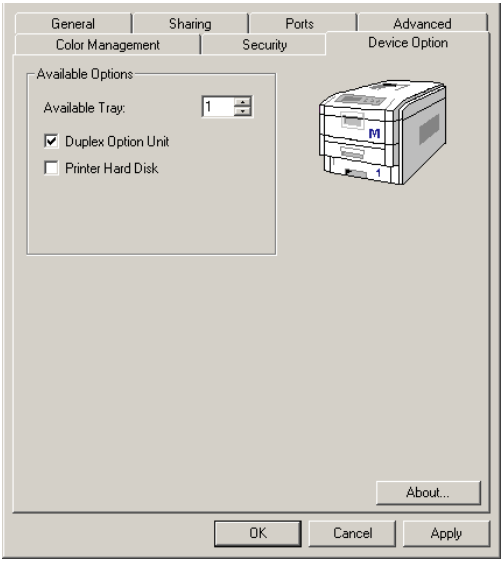
1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab. Under **Installable Options**, make sure **Duplex** is set to **Installed**.



4. Click **OK** and close the Printers dialog box.

PCL Driver

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Option** tab, click **Duplex Option Unit**.



4. Click **OK** and close the Printers dialog box.

Changing Defaults for Paper Feed, Size and Media in the Driver

The normal default for these items is automatic detection.

NOTE

If the defaults set manually in the printer menu differ from those you set in the printer driver, the printer will not print and the LCD will display an error message.

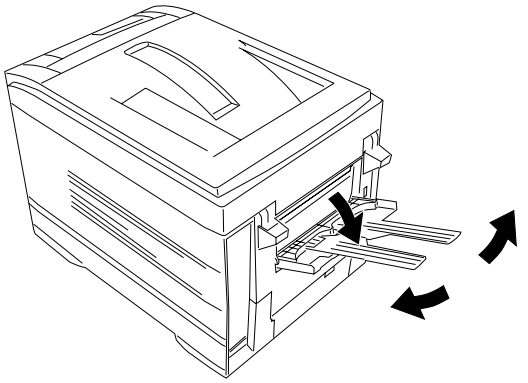
The following printer driver instructions are given as a guide only. Some software applications require the paper feed, size and media settings to be selected from within the software (under Page Setup).

PostScript Driver

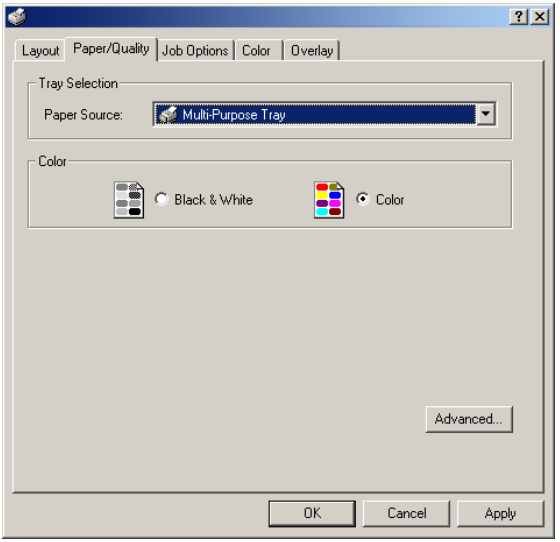
1. Click **Start** → **Settings** → **Printers**.
2. Right click the printer name and click **Printing Preferences**.

Important!

If you will be using heavy media, transparencies, envelopes or labels, make sure you open the rear exit before printing.

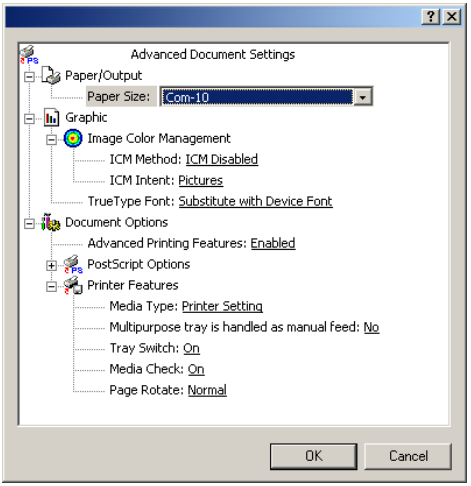


3. Click the **Paper/Quality** tab. Under **Tray Selection**, select the paper feed in the **Paper Source** drop-down list.

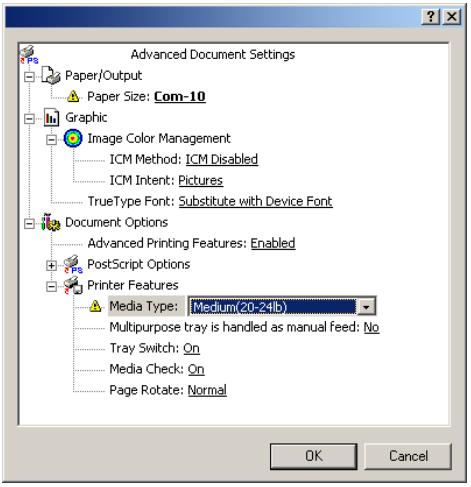


4. Click the **Advanced** button.

5. Under **Paper/Output**, select the media size in the **Paper Size** drop-down list.



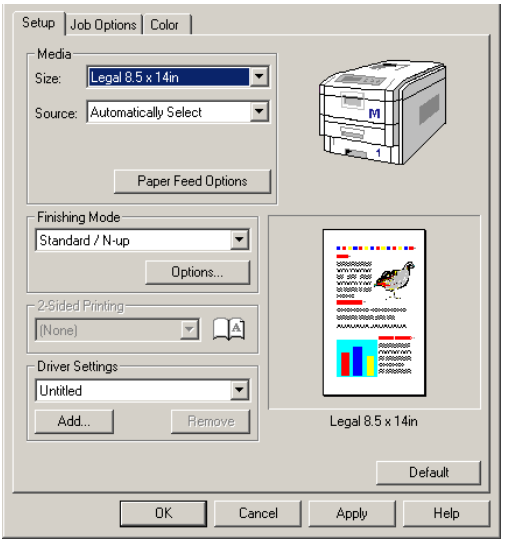
6. Under **Document Options** → **Printer Features**, click **Media Type** and select the media from the drop-down list.



7. Click **OK** twice and close the Printers dialog box.

PCL Drivers

1. Click **Start** → **Settings** → **Printers**.
2. Right click the printer name and click **Printing Preferences**.
3. In the **Setup** tab, under **Media**, select the required paper size in the **Size** drop-down list.



4. Select the required paper feed under **Source**.

NOTE

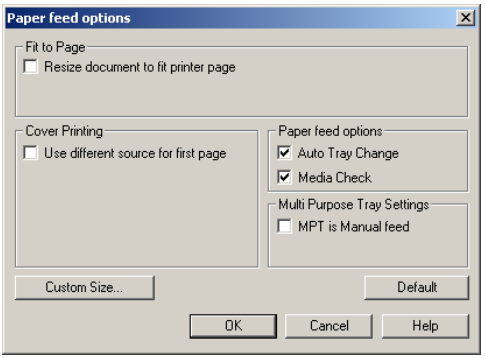
If a paper tray is selected the Weight field becomes visible.

5. Select the required paper type under **Weight**.

NOTE

If Printer Setting is selected, make sure the printer has been set to the correct media type.

6. Click **Paper Feed Options** and make any other selections, then click **OK**.



7. Click **OK** twice and close the Printing Preferences dialog box.

Network Printer Status Utility

- Available on TCP/IP network connection only.

The Network Printer Status utility is available if your administrator has installed it. If the utility is installed, you will see the following changes to the printer driver **Properties** dialog box:

- a new **Status** tab is added
- an **Option** button is added to the **Device Option** tab.

This utility allows you to view (but not change) the status of the following on the **Status** tab:

- paper trays installed and the media assigned to them.
- total size and percentage used of disk/memory.
- percentage of toner remaining.

Important!

If you select **Automatic Status Update** in the **Status** tab, the driver will automatically ping the printer for the latest status information every time you open the **Properties** dialog box. This causes a significant delay until the Properties box opens. To avoid this, use the **Update Status** button in the **Status** tab to manually update the information on demand.

Windows 2000 Operation

This section explains how to set up color printing and how to use the printer's features including:

- N-up printing (see page 170)
- Custom page sizes (see page 172)
- Selecting print resolution (see page 177)
- Duplex printing (see page 178)
- Watermarks (see page 184)
- Collating (see page 186)
- Proof and Print (see page 187)
- Secure print: printing confidential documents (see page 190)
- Storing files to the hard disk drive (see page 193)
- Printing posters (see page 196)

NOTE

Most applications allow the printer properties to be accessed from within the document print dialog box.

Factors That Affect Color Printing

The PCL and PostScript printer drivers supplied with your printer provide several controls for changing the color output. For general use the default driver settings produce good results for most documents.

Many applications have their own color settings, and these may override the settings in the printer driver. Please refer to the documentation for your software application for details on how that particular program's color management functions.

If you wish to manually adjust the color settings in your printer driver, please be aware that *color reproduction is a complex topic, and there are many factors to take into consideration*. Some of the most important factors are listed below.

Differences Between the Range of Colors a Monitor or Printer Can Reproduce

- Neither a printer nor a monitor is capable of reproducing the full range of colors visible to the human eye. Each device is restricted to a certain range of colors. In addition to this, a printer cannot reproduce all of the colors displayed on a monitor, and vice versa.
- Both devices use very different technologies to represent color. A monitor uses Red, Green and Blue (RGB) phosphors (or LCDs), a printer uses Cyan, Magenta, Yellow and Black (CMYK) toner or ink.
- A monitor can display very vivid colors such as intense reds and blues and these cannot be easily produced on any printer using toner or ink. Similarly, there are certain colors, (some yellows for example), that can be printed, but cannot be displayed accurately on a monitor. This disparity between monitors and printers is often the main reason that printed colors do not match the colors displayed on screen.

Viewing Conditions

A document can look very different under various lighting conditions. For example, the colors may look different when viewed standing next to a sunlit window, compared to how they look under standard office fluorescent lighting.

Printer Driver Color Settings

The driver settings for Manual color can change the appearance of a document. There are several options available to help match the printed colors with those displayed on screen. These options are explained in subsequent sections of this User Manual.

Monitor Settings

The brightness and contrast controls on your monitor can change how your document looks on-screen. Additionally, your monitor color temperature influences how "warm" or "cool" the colors look.

NOTE

Several of the Color Matching options make reference to your monitor's Color Temperature. Many modern monitors allow the color temperature to be adjusted using the monitor's control panel.

There are several settings found on a typical monitor:

- **5000k***
  Warmest; yellowish lighting, typically used in graphics arts environments.
- **6500k**
  Cooler; approximates daylight conditions.
- **9300k**
  Cool; the default setting for many monitors and television sets.

*k = degrees Kelvin, a measurement of temperature

How Your Software Application Displays Color

Some graphics applications such as CorelDRAW® or Adobe® Photoshop® may display color differently from "office" applications such as Microsoft® Word. Please see your application's online help or user manual for more information.

Paper Type

The type of paper used can also significantly affect the printed color. For example, a printout on recycled paper can look duller than one on specially formulated glossy paper.

Choosing a Color Matching Method

There is no one way to achieve a good match between the document displayed on your monitor, and its printed equivalent. There are many factors involved in achieving accurate and reproducible color.

However, the following guidelines may help in achieving good color output from your printer. There are several suggested methods, depending on the type of document you are printing.

NOTE

These suggestions are for guidance only. Your results may vary depending on the application from which you are printing. Some applications will override any color matching settings in the printer driver without warning.

RGB or CMYK?

The guidelines for choosing a color matching method makes distinctions between Red, Green, Blue (RGB) and Cyan, Magenta, Yellow, Black (CMYK).

Generally, most documents you print will be in RGB format. This is the most common, and, if you do not know your document's color mode, assume that it is RGB.

Typically CMYK documents are only supported in professional Desktop Publishing and Graphics applications.

Matching Photographic Images

RGB Only

Sharp Color Matching (see page 162) is a generally a good choice. Select a matching method appropriate to your monitor.

RGB or CMYK

If you are printing photographic images from a graphics application such as Adobe Photoshop, you may be able to use Soft-Proofing to simulate the printed image on your monitor. To do this, you can use the provided ICC-Profiles (see “Windows ICM Color Matching” on page 169), and then print using the ICC profiles as the Print Space (or Output space).

Matching Specific Colors (e.g., a Company logo)

RGB Only

- Sharp Color Matching (see page 162), and the sRGB setting: PCL or PS driver.
- PostScript Color Matching using the Absolute Colorimetric option (see page 164).
- Use the Color Swatch Utility to print out a chart of RGB swatches and enter your desired RGB values in your application's color picker—PS only (see page 161).

RGB or CMYK

- If you are printing from a graphics application such as Adobe Photoshop, you may be able to use Soft-Proofing to simulate the printed image on your monitor. To do this, you can use the provided ICC-Profiles (see “Windows ICM Color Matching” on page 169), and then print using the ICC profiles as the Print Space (or Output space) (PS only).
- Alternatively, use PostScript Color Matching with the Absolute Colorimetric setting (see page 164).

Printing Vivid Colors

RGB Only

- Use Sharp Color Matching (see page 162), with the Monitor 6500k Vivid, sRGB or Digital Camera settings (PCL or PS).

RGB or CMYK

- Use PostScript Color Matching (see page 164) with the Saturation option.

Color Matching: PCL Driver

Color Matching Options

The Color Matching options in the PCL driver can be used to help match your printed colors to the ones displayed on your monitor.

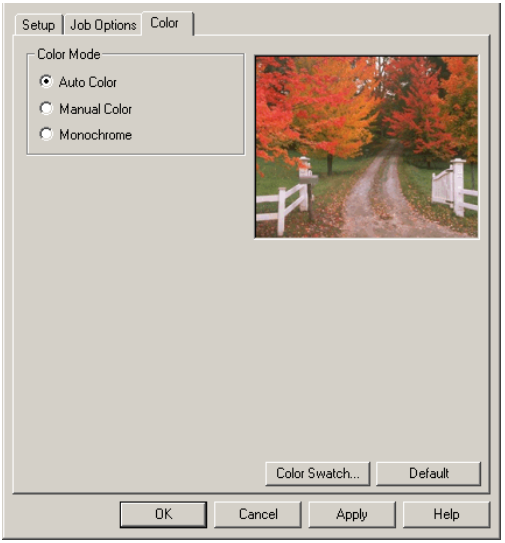
NOTE

The PCL driver's color options are only designed to work with RGB data.

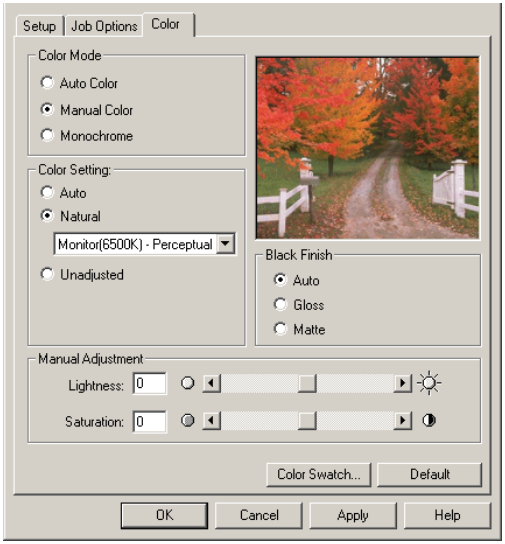
If you are printing CMYK data, we recommend you use the PostScript driver.

To manually set the color matching options in the PCL driver:

1. Click **Start** → **Settings** → **Printers**.
2. Right click the appropriate printer name and click **Printing Preferences**.
3. Click the **Color** tab.



a. Click **Manual Color** under **Color Mode**, then click **Natural** under **Color Setting**.



4. Select the method you wish to use:

Monitor (6500k) Perceptual
Optimized for printing photographs when using a monitor with a color temperature of 6500K.

Monitor (6500k) Vivid
Optimized for printing bright colors when using a monitor with a color temperature of 6500K. Ideal for office graphics.

Monitor (9300k)
Optimized for printing photographs when using a monitor with a color temperature of 9300K.

Digital Camera
Optimized for printing photographs taken with a digital camera. This tends to produce prints with lighter and brighter colors. For some photographs, other settings may be better depending on the subjects and the conditions under which they were taken.

sRGB
Optimized for matching specific colors, such as a company logo color. The colors within the printer's color gamut are printed

without any modification, and only colors that fall outside the printable colors are modified.

5. Set any other required parameters using the on-line Help for guidance.
6. When you are done, click **OK** and close the Printing Preferences dialog box.

The Print Color Swatch Utility

For use with applications which allow you to set your own RGB values for colors.

The Color Swatch utility prints out charts of sample colors. Listed below each color are the corresponding RGB (Red, Green, Blue) values to use in your application to match that printed color.

An example of using the Print Color Swatch function:

You wish to print a logo in a particular shade of red. The steps you would follow are:

1. Click **Start** → **Settings** → **Printers**.
2. Right click the printer name and click **Printing Preferences**.
3. Click the **Color** tab.
4. Click the **Color Swatch** button to print the color swatch samples.
5. Select the shade of red that best suits your needs and make a note of the RGB value below that particular shade.
6. Using your program's color picker, enter these same RGB values (from step 5), and change the logo to that color.

NOTE

The RGB color displayed on your monitor may not necessarily match what was printed on the color swatch. If this is the case, it is probably due to the difference between how your monitor and printer reproduce color.

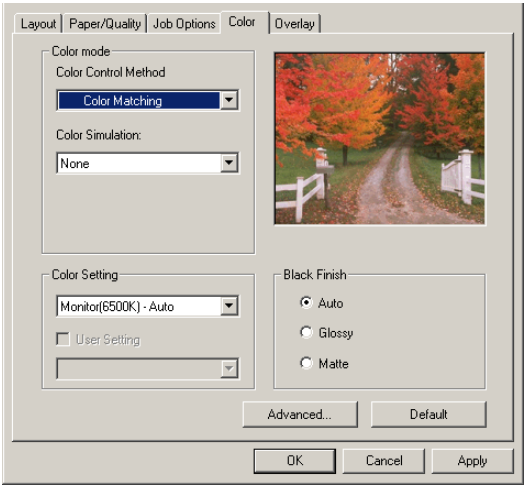
Color Matching: PostScript Driver

Color Matching Options

The PostScript driver offers several different methods of controlling the color output of the printer.

To manually set the color matching options in the PostScript driver:

1. Click **Start** → **Settings** → **Printers**.
2. Right click the printer name and click **Printing Preferences**.
3. Click the **Color** tab.

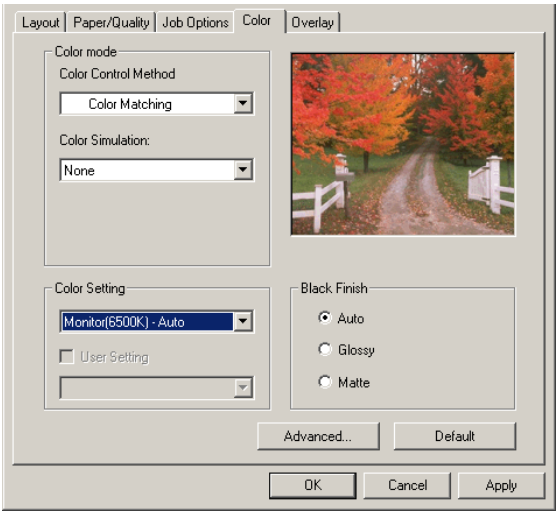


4. Select the method to use from the **Color Control Method** drop-down list under **Color Mode**:

   a. **Color Control = Sharp Color Matching**

      This is Sharp's proprietary color matching system, and affects *RGB data only*.

Select the type to be used from the drop-down list under **Color Setting**:



- **Monitor (6500K) Auto**
  Optimized for printing general documents when using a monitor with a color temperature of 6500K.
- **Monitor (6500K) Perceptual**
  Optimized for printing photographs when using a monitor with a color temperature of 6500K.
- **Monitor (6500K) Vivid**
  Optimized for printing bright colors when using a monitor with a color temperature of 6500K. Ideal for office graphics and text.
- **Monitor (9300K)**
  Optimized for printing photographs when using a monitor with a color temperature of 6500K.
- **Digital Camera**
  Optimized for printing photographs taken with a digital camera. This tends to produce prints with lighter and brighter colors. For some photographs, other settings may be better depending on the subjects and the conditions under which they were taken.

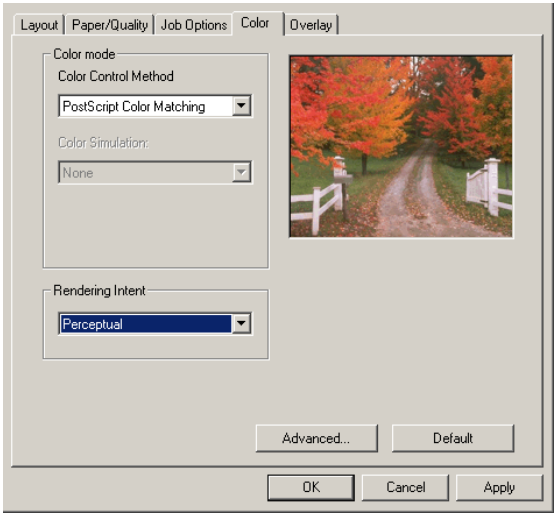
- **sRGB**
  Optimized for matching specific colors, such as a company logo color.

  The colors within the printer's color gamut are printed without any modification, and only colors that fall outside the printable colors are modified.

b. Color Control = PostScript Color Matching

This uses PostScript Color Rendering Dictionaries built-in to the printer, and affects both RGB and CMYK data.

Select the rendering type from the **Rendering Intent** drop-down list.



- **Rendering Intents**
  When a document is printed, a conversion takes place from the document's color space to the printer color space. The rendering intents are essentially a set of rules that determine how this color conversion takes place.

  The rendering intents that the printer driver provides are listed below:

– *Auto*
  Best choice for printing general documents.

– *Perceptual*

Best choice for printing photographs. Compresses the source gamut into the printer's gamut whilst maintaining the overall appearance of an image. This may change the overall appearance of an image as all the colors are shifted together.

– *Saturation*

Best choice for printing bright & saturated colors if you don't necessarily care how accurate the colors are. This makes it the recommended choice for graphs, charts, diagrams etc. Maps fully saturated colors in the source gamut to fully saturated colors in the printer's gamut.

– *Relative Colorimetric*

Good for proofing CMYK color images on a desktop printer. Much like Absolute Colorimetric, except that it scales the source white to the (usually) paper white; i.e. unlike Absolute Colorimetric, this attempts to take the paper white into account.

– *Absolute Colorimetric*

Best for printing solid colors and tints, such as Company logos etc. Matches colors common to both devices exactly, and clips the out of gamut colors to their nearest printed equivalent. Tries to print white as it appears on screen. The white of a monitor is often very different from paper white, so this may result in color casts, especially in the lighter areas of an image.

c. Color Control = Using ICC Profile

This option provides a method of matching RGB colors similar to Windows ICM matching. See “Using the ICC Profiles Feature: PostScript Driver Only” on page 166.

d. Color Control = No Color Matching

Use this option to switch off all printer color matching.

e. Color Control = Print in Grayscale

This option prints all documents as monochrome.

Using the ICC Profiles Feature: PostScript Driver Only

- Affects **RGB data only**.

This provides a method of matching RGB colors similar to Windows ICM matching. The main advantage it has over Windows ICM color matching is that it provides a method of printing using both input and output profiles. Windows ICM matching only allows output profiles to be chosen.

Input Profiles (e.g., a digital camera) provide information about the color in the original device that was used to capture or display the image data. For example, an input device could be a scanner, digital camera, or monitor.

Output Profiles (e.g., the printer) provide information about the device to which you are printing.

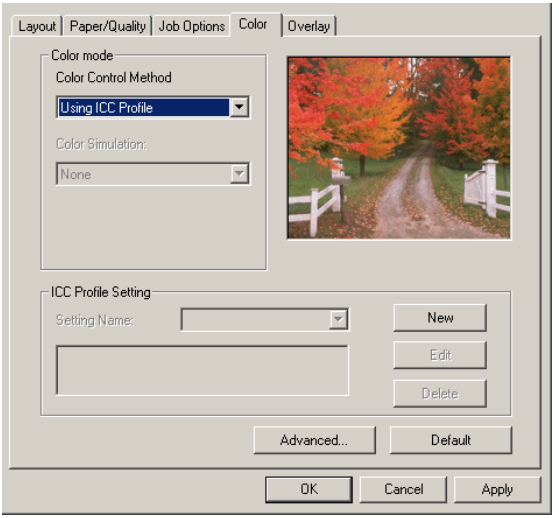
The Using ICC Profiles feature uses both the input and output profiles to generate a CRD (Color Rendering Dictionary), which is used to match the colors as closely as possible.

NOTE

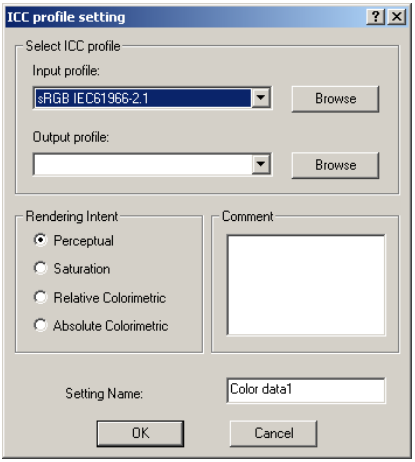
This feature may not work for all application programs. However, many professional graphics applications offer a similar feature in their print settings, with the ability to choose a source (input) color space, and a print (output) color space

To Set Up ICC Profiles:

1. Click **Start** → **Settings** → **Printers**.
2. Right click the printer name and click **Printing Preferences**.
3. Click the **Color** tab.
4. Under **Color mode**, select **Using ICC Profile** in the **Color Control Method** drop-down list.



5. Click the **New** button.



   a. Select the **Input profile** and **Output profile** in the drop-down lists under **Select ICC profile**.

   b. Select the desired **Rendering Intent** and type in a name for the profile, then click **OK**. The new name will appear in the **Setting Name** drop-down list under **ICC Profile Setting**.

   c. Repeat steps 5-7 for each ICC profile you wish to define.

6. Click **OK** twice and close the Printers dialog box.

Windows ICM Color Matching

- ICM is the color management system built into Windows.
- Affects **RGB data only**.
- Can be associated with either the PCL or PS driver

Windows ICM uses ICC profiles for your monitor and printer; these profiles describe the colors that your device is capable of reproducing. ICC profiles can be associated with your printer via the **Color Management** tab of the printer driver.

Depending on how you have installed the printer driver, the color profiles may already be associated with the driver.

To associate ICC Color Profiles with the printer driver:

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File**, then **Properties**.
3. Click the **Color Management** tab.
4. Under "**Color Profiles currently associated with this printer**", you should see the names of profiles that match your printer model. If you do not see any profiles associated with the driver, click "**Add…**" and locate the ICC profiles for your printer.

Windows ICM uses the information in these profiles to convert colors in your documents to colors that the printer can reproduce. The way in which this conversion is performed can be controlled via the ICM Intent control in the printer driver

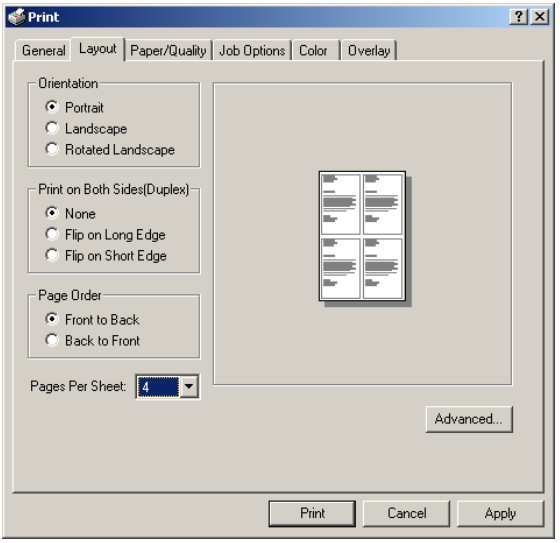
NOTE

The Color Match "Using ICC Profiles" feature provides an alternative to Windows ICM . It is similar to Windows ICM, but offers several additional features.

PrintingMultiple Pages on One Sheet (N-up Printing)

N-Up Printing Using the PostScript Driver

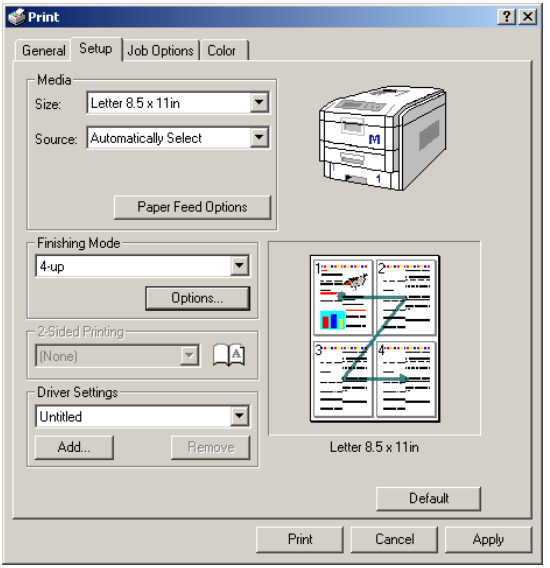
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PS driver on the **General** tab, then click the **Layout** tab.
3. Under **Pages Per Sheet**, select the required number of pages.



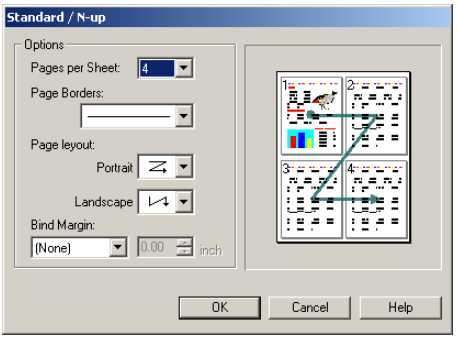
4. Click **Print**.

N-Up Printing Using the PCL Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Setup** tab.
3. Under **Finishing Mode**, select the required number of pages per sheet.



4. Click **Options** and select the **Page Borders**, **Page Layout** and **Bind Margin**, then click **OK**.

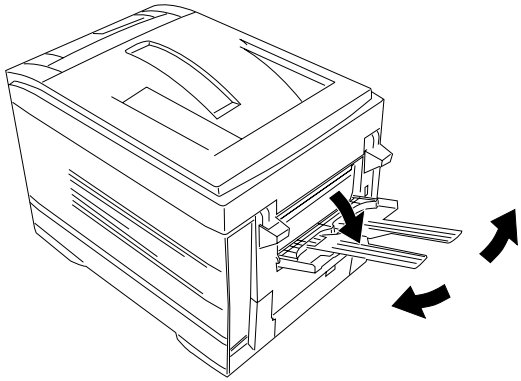


5. Click **Print**.

Printing Custom Page Sizes

Important!

If you will be using heavy media, transparencies, envelopes or labels, make sure you open the rear exit before printing.



Custom page sizes can only be printed from the multi purpose tray. The printer media size for the multi purpose tray must be manually set in the driver to the custom paper size before use (range 3½ to 8½ inches [89 to 216 mm] wide x 5 to 14 inches [127 to 356 mm] long).

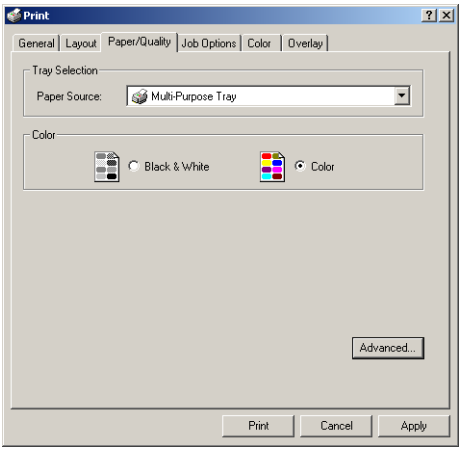
Printing Custom Pages Using the PostScript Driver

NOTE

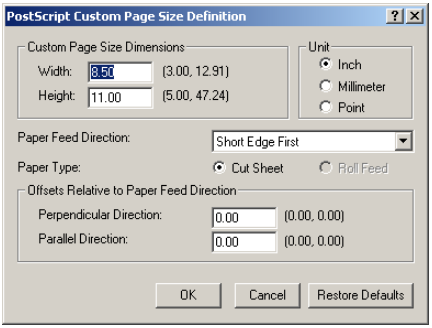
One custom paper size can be defined in the PostScript driver.

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PS driver on the **General** tab, then click the **Paper/Quality** tab.

3. Under **Tray Selection**, select **Multi-Purpose Tray** in the **Paper Source** drop-down list.



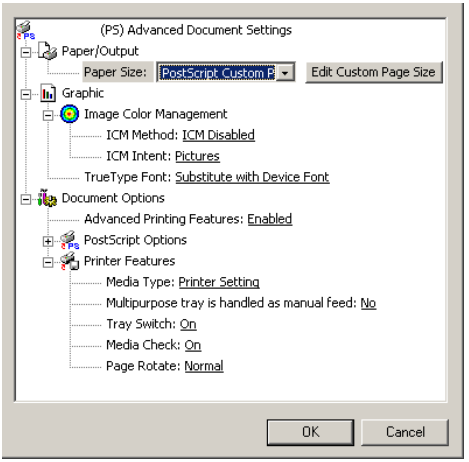
4. Click the **Advanced** button. Under **Paper/Output**, select **Postscript Custom Page Size** in the **Paper Size** drop-down list.



NOTE

- **Long Edge First = media feeds in long edge first**
- **Short Edge First = media feeds in short edge first**
- **Long Edge First (flipped) = Reserved for future use.**
- **Short Edge First (flipped) = Reserved for future use.**

5. Enter the **Width** and **Height** for the custom paper and select the **Paper Feed Direction**, then click **OK**.



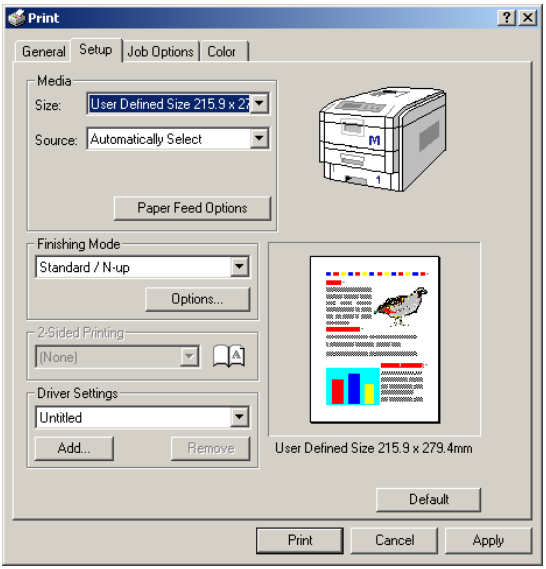
6. Click **OK**.
7. Click **Print**.

Printing Custom Pages Using the PCL Driver

NOTE

Up to 32 custom page sizes can be defined in the PCL driver.

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Setup** tab.
1. Under **Media**, select **User Defined** in the **Size** drop-down list.

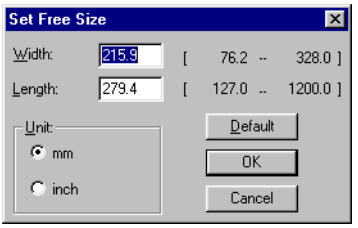


NOTE

You may see a Warning dialog box indicating a conflict. If you do, click OK and the driver will automatically make the needed changes to correct for the conflict.

The Set Free Size dialog box appears.

2. Select the unit, then enter the width and length measurements and click **OK**.

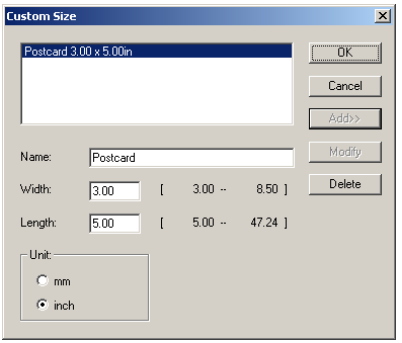


3. Check that **User Defined** now appears in the **Size** box on the **Setup** tab.

NOTE

To save the setting for future use:

- **Click Paper Feed Options, then click Custom Size.**
- **Select the unit, then enter the relevant information for Width and Height and give your custom size a name under Name.**
- **Click Add.**



- **Click OK.**
  The Custom Page Size is added to the bottom of the Paper Size list.

4. Click **OK**.
5. Click **Print**.

Changing the Resolution for a Print Job

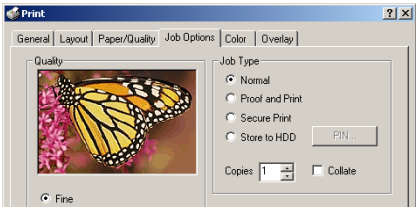
NOTE

These instructions explain how to change the settings as you are printing a job. If you wish to change the settings to apply to all jobs (default settings):

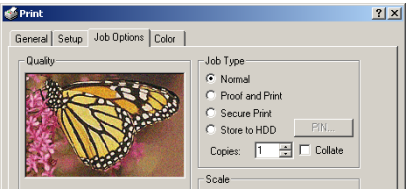
- **Click Start → Settings → Printers.**
- **Right click the appropriate printer name. then select Properties.**
- **Follow steps 3, etc., below: note that the Properties screen for setting defaults will have more tabs.**

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate driver on the **General** tab.
1. Click the **Job Options** tab.
2. Select the required printing resolution under **Quality**.

PostScript Driver



PCL Driver



3. Select **Toner Saving** if appropriate.
4. Click **Print**.

Duplex Printing
(Printing on Both Sides of the Paper)

NOTE

The optional duplex unit must be installed in the printer and enabled before duplex printing can be carried out.

- Standard paper sizes only.
- Paper weight range 20 to 28 lb. US Bond (75 to 105 g/m^2).
- Paper must be loaded print side *up*.
- Only Tray 1, optional Trays 2 and 3, and the High Capacity Feeder trays can be used for duplex printing. The MP tray *cannot* be used for duplex printing.

NOTE

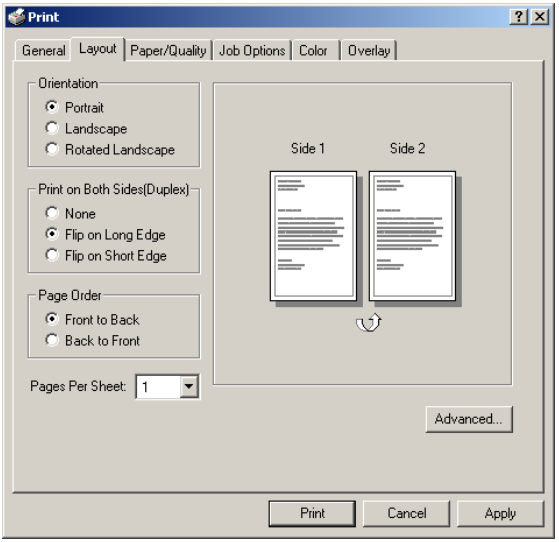
These instructions explain how to change the settings as you are printing a job. If you wish to change the settings to apply to all jobs:

- **Click Start → Settings → Printers.**
- **Right click the appropriate printer name. then select Properties.**
- **Follow steps 3, etc., below: note that the Properties screen for setting defaults will have more tabs.**

Duplex Printing Using the PostScript Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PS driver on the **General** tab, then click the **Layout** tab.

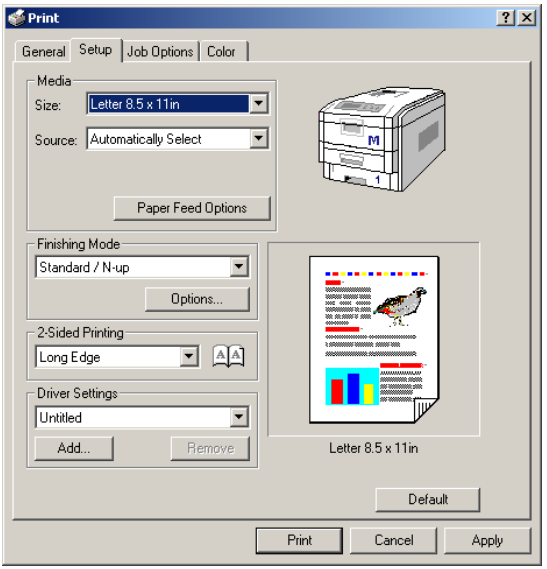
3. Under **Print on Both Sides(Duplex)** tab, select **Flip on Long Edge** or **Flip on Short Edge**.



4. Click **Print**.

Duplex Printing Using the PCL Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Setup** tab.
3. Under **2-Sided Printing**, select **Long Edge** or **Short Edge**.



4. Click **Print**.

Printing Booklets

NOTES

- **You must have the duplex unit installed and enabled in order to print booklets.**
- **Not available on some network connections: see the Help file.**
- **Some software applications may not support booklet printing.**
- **The right-to-left setting allows a booklet to be printed for right to left reading, which is used in some languages.**

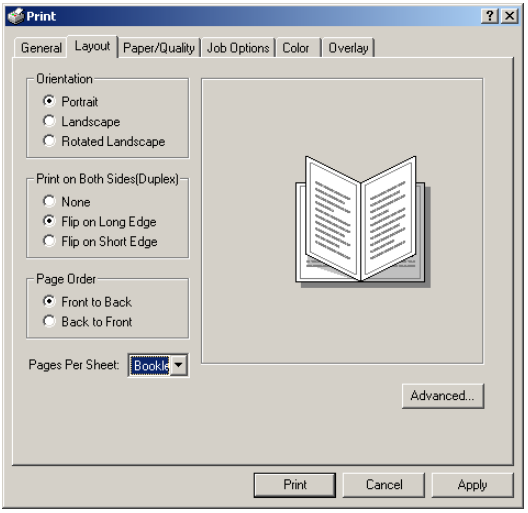
Printing Booklets Using the PostScript Driver

Important!

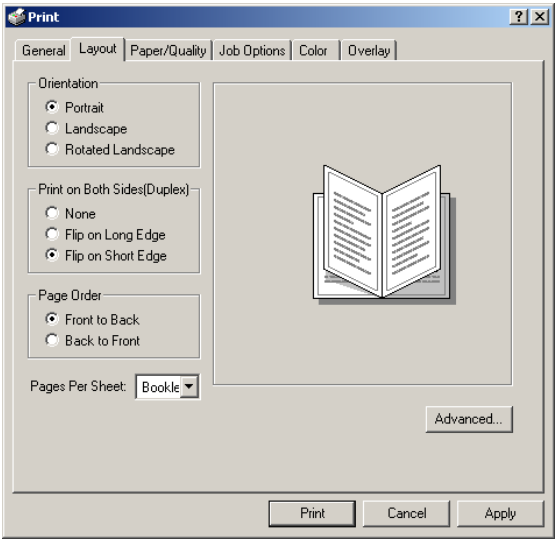
Booklet printing using the PostScript driver is restricted to 2 pages per sheet (e.g., print a 5½ x 8½ inch booklet on 8½ x 11 inch paper, or print an 8½ x 11 inch document on 11 x 17 inch paper).

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Layout** tab.

3. Under **Pages Per Sheet**, select **Booklet** in the drop-down list.



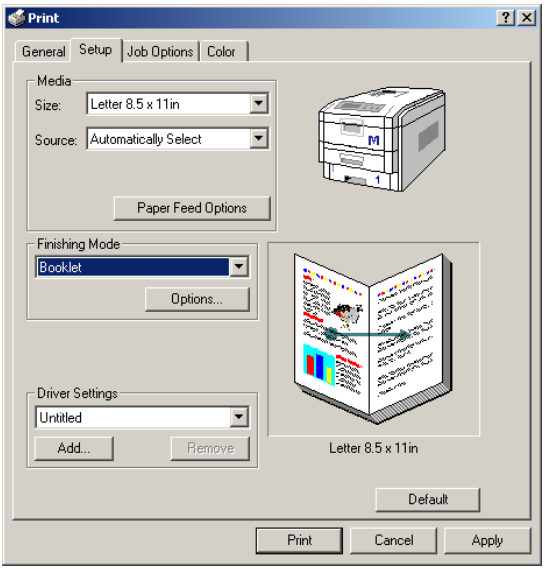
4. Under **Print on Both Sides(Duplex)**, select **Flip on Short edge**.



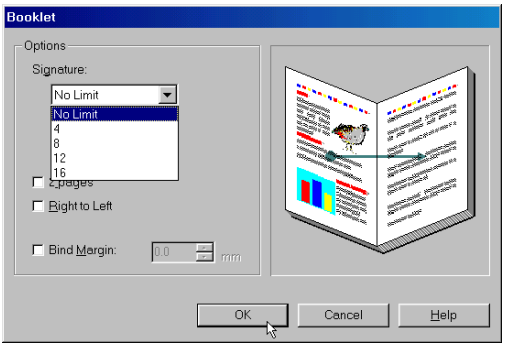
5. Click **Print**.

Printing Booklets Using the PCL Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PS driver on the **General** tab, then click the **Setup** tab.
3. Under **Finishing Mode**, select **Booklet** in the drop-down list.



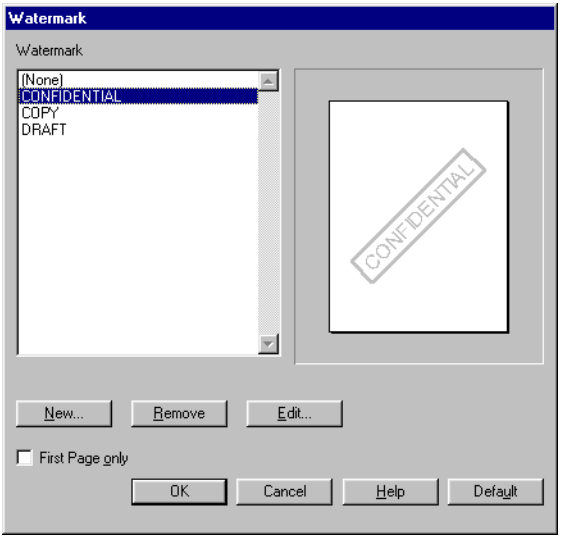
4. Click the **Options** button and set **Signature**, **2Pages**, **Right to Left** and **Bind Margin** as required, then click **OK**.



5. Click **Print**.

Printing Watermarks: PCL Driver Only

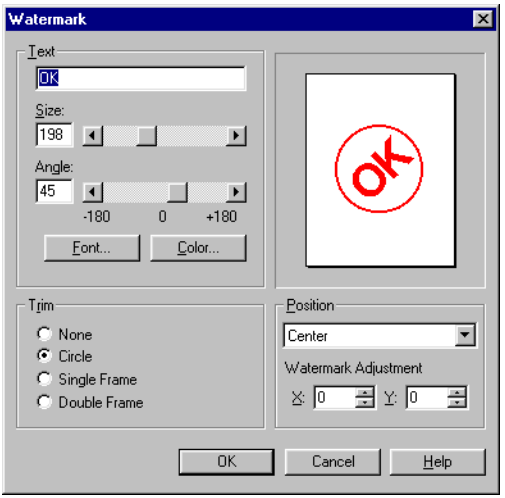
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Job Options** tab.
3. Click the **Watermark** button.
4. Select a name from the **Watermark** list.



NOTE

To create a new watermark or edit an existing watermark:

- **Click the New or Edit button.**



- **Enter the text for the watermark and select the font, size, angle, etc., to be used.**
- **Click OK.**
  The new watermark appears in the Watermark list.

5. If you wish to print the watermark only on the first page of the document, select **First Page only**.
6. Click **OK**.
7. Click **Print**.

Collating

Collating can be carried out with or without a hard disk drive installed. However, printers with a hard disk drive will provide greater performance.

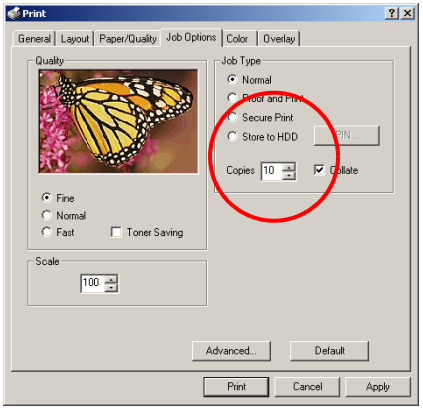
Important

If your software application has a collate option, use it instead of the collate option in the printer driver.

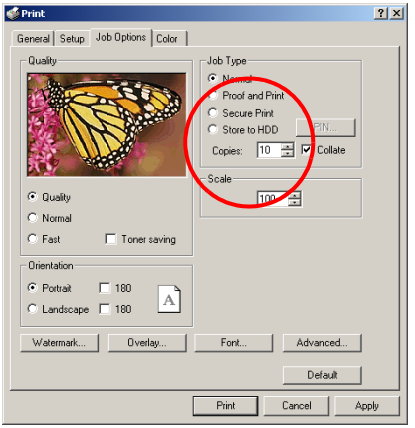
The following instructions explain how to select collating using the printer driver.

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate driver on the **General** tab, then click the **Job Options** tab.
3. Under **Job Type**, enter the number of copies required and—*only if the application has no collate option*—select **Collate**.

PostScript Driver



PCL Driver



4. Click **Print**.

Proof and Print

Proof and print allows printing of a single copy of a document for checking before printing multiple copies of the same document.

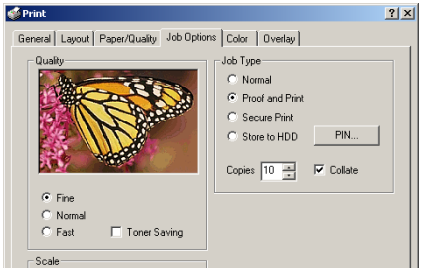
NOTES

- **The internal hard disk must be installed in the printer and enabled, to allow for spooling of the print job before final printing.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy is printed.**
- **If the software application being used has a collate print option, it must be turned OFF for proof and print to operate correctly.**
- **Proof and print may not be available in some software applications.**

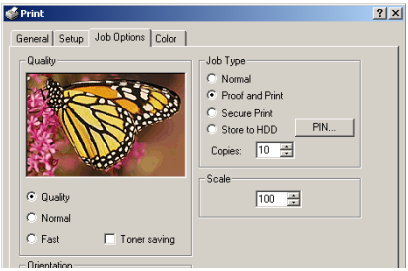
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate driver on the **General** tab, then click the **Job Options tab**.

3. Enter the number of copies and, if required, select **Collate**.

PostScript Driver



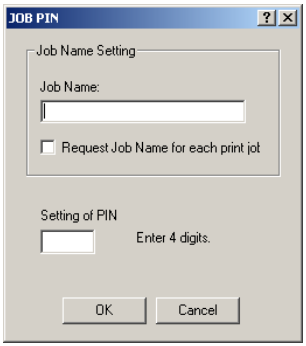
PCL Driver



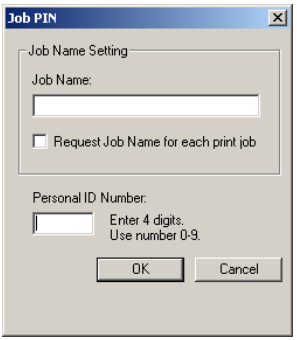
   a. Under **Job Type**, select **Proof and Print**.

   b. Enter a job name of up to 16 characters under **Job Name Setting** and, if required, select **Request Job Name for each print job**.

PostScript Driver



PCL Driver



   c. Type in a four digit personal ID number from 0000 to 7777, then click **OK**.

4. Click **Print**. The document is stored on the hard disk drive, and one copy is printed for checking.

5. After checking the proof, print or delete (if incorrect) the remaining copies of the document using the procedures given below.

Printing Copies

1. Press the MENU button to access the **PRINT JOBS MENU**, then press the SELECT button.
2. Enter your personal ID number using the buttons on the printer control panel.
3. Press the VALUE button until **ALL JOBS** or the required job name is displayed.
4. Press the SELECT button to print the remaining copies of the document.

Deleting Copies

If the proof is not ready for printing, the job must be deleted from the printer:

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter your personal ID number using the buttons on the printer control panel.
3. Press the VALUE button until **ALL JOBS** or the required job name is displayed.
4. Press the CANCEL button to delete the remaining copies of the document.
5. When the deletion confirmation message appears, confirm by pressing the SELECT button.

Secure Printing (Printing Confidential Documents)

Secure printing or printing with passwords allows the printing of confidential documents on printers that are shared with other users.

NOTE

- **The internal hard disk must be installed in the printer and enabled to allow for spooling of the print job before final printing.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy printed.**
- **If the software application being used has a collate print option, this must be turned OFF for secure printing to operate correctly.**
- **Secure printing may not be available in some software applications.**

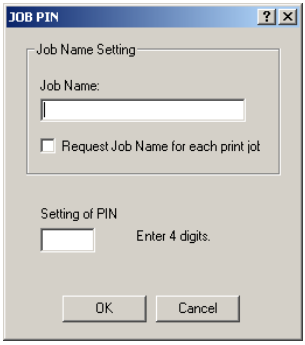
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate driver on the **General** tab, then click the **Job Options** tab.
3. Under **Job Type**, select **Secure Print**.

NOTE

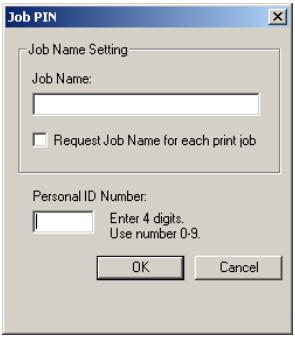
If you have already stored a Secure Print document on the hard disk drive and have not yet printed it, click the PIN button and enter a new name for the current document.

a. Enter a job name of up to 16 characters under **Job Name** , and, if required, select **Request Job Name for each print job**.

PostScript Driver

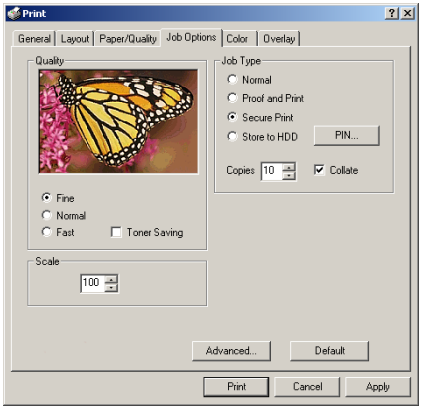


PCL Driver

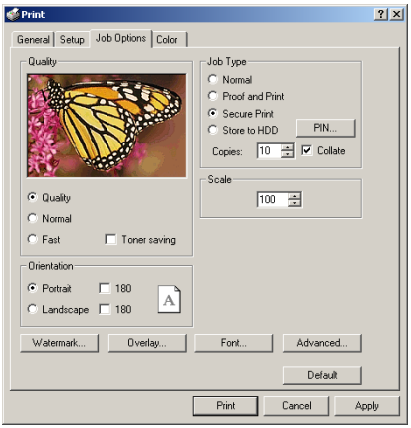


b. Type in a four digit personal ID number from 0000 to 7777, then click **OK**.

PostScript Driver



PCL Driver



4. Enter the number of copies and, if required, check the **Collate** box.
5. Click **Print**. The document will be stored on the printer's hard disk.
6. Go to the printer and print out the document using the front panel (see below).

Printing a Confidential Document from the Front Panel

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you set above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the SELECT button.
   The document will print and be deleted from the hard disk drive.

Deleting the Confidential Document Before Printing It

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you set above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the CANCEL button to delete the job from the printer.

Store to Hard Disk

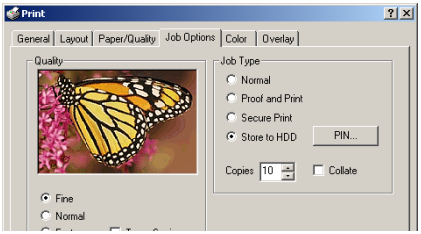
Store to Hard Disk (job spooling) allows print jobs to be prepared and stored on the hard disk for printing on demand. This is good for forms, generic memos, letterhead stationery, etc.

NOTE

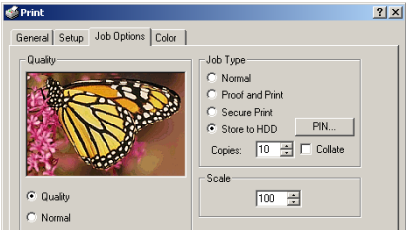
- **The internal hard disk must be installed in the printer and enabled.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy printed.**
- **If the software application being used has a collate print option, this must be turned OFF for Store to Hard Disk to operate correctly.**
- **Store to Hard Disk may not be available in some software applications.**

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the appropriate driver on the **General** tab, then click the **Job Options** tab.
3. Enter the number of required copies and, if required, check the **Collate** box, then select **Store to HDD**.

PostScript Driver



PCL Driver

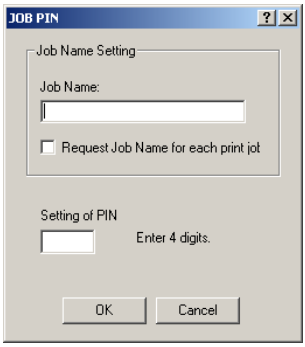


NOTE

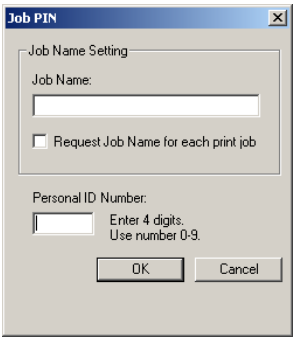
If you've already stored a document on the hard disk drive and want to store another one, click the PIN button and enter a new Job Name.

a. Enter a job name of up to 16 characters under **Job Name Setting** and, if required, select **Request Job Name for each print job**.

PostScript Driver



PCL Driver



b. Type a four digit personal ID number from 0000 to 7777, then click **OK**.

4. Click **Print**. The document will be stored on the hard disk and can then be printed on demand, or deleted, using the procedures given below.

To Print the Stored Document

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you selected above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the SELECT button to print the document.

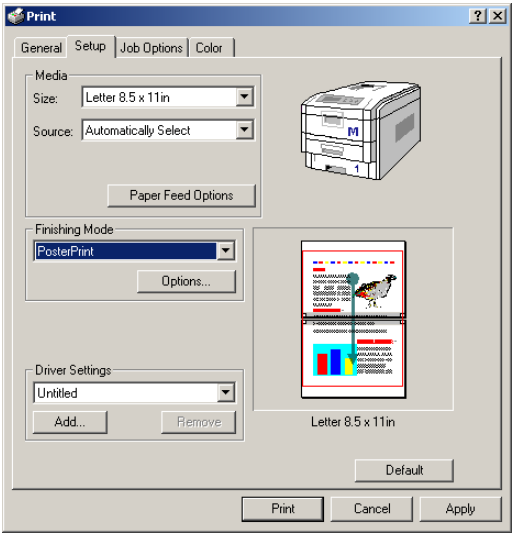
To Delete a Stored Job from the Hard Disk Drive

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you selected above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the CANCEL button to delete the remaining copies of the document.
5. When the deletion confirmation message appears, confirm by pressing the SELECT button.

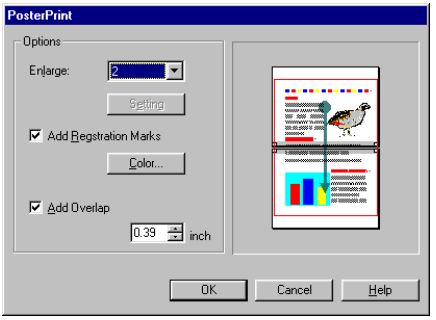
Printing Posters: PCL Driver Only

This option allows you to configure and print posters by breaking up the document page into multiple pieces which print enlarged on separate sheets. Then the separate sheets are combined to produce a poster. It is only available with the PCL printer driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, click the PCL driver on the **General** tab, then click the **Setup** tab.
3. Under **Finishing Mode**, select **Poster Print**.



4. Click **Options...** and enter the configuration details



5. Click **OK**, then click **Print**.

Windows Me/98/95
Printer Drivers

See your printed *Software Installation Guide* for information on installing printer drivers.

Which Printer Driver to Use?

Your printer comes with Windows drivers for PCL and Adobe® PostScript® (PS). You can install either of these, or both if you wish. Which driver you choose depends on your application.

- If you use TrueType fonts and you do not print PostScript (including ".eps" files) graphics, choose the PCL driver. This will be more efficient and give good results.
- If you use PostScript fonts or you will be printing PostScript graphics, choose the PostScript driver. In this situation performance will be faster and graphics will be printed at their best quality.

NOTE

The line art graphics in this manual are PostScript. So if you plan to print parts of this manual choose the PostScript driver. Otherwise the line art graphics will only print at low resolution.

If neither driver seems to cover all your needs, you should install both drivers: select the same printer port (LPT1 or Network Port) for both drivers during the installation.

Set the driver you plan to use most of the time to be your Windows default driver. Most applications allow you to choose a different printer from within the print dialog, so you can print using the alternative driver whenever you need to.

Enabling Installed Options in the Drivers

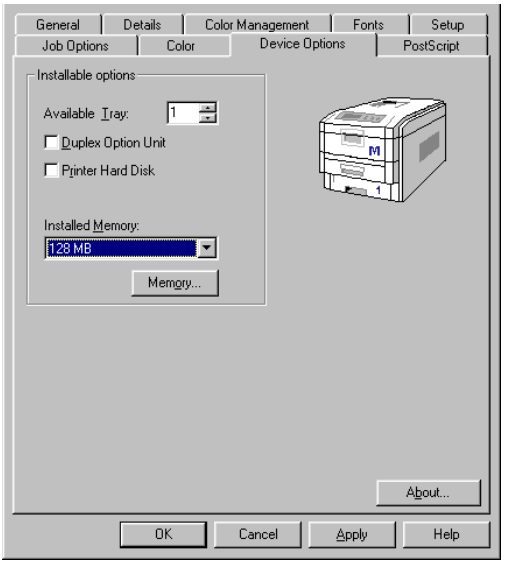
Certain options such as additional memory, the duplexer, or additional trays may be installed in your printer.

Before using the printer, you must enter the printer driver(s) and enable the options. You only need to do this once.

For Additional Memory

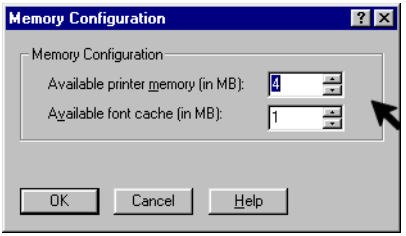
If you have additional memory in your printer, use these instructions to update the Windows PostScript driver so that it recognizes the additional memory:

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Options** tab.



4. Under **Installed Memory**, adjust the amount of memory to be the same as that now installed in the printer, as shown in the MenuMap (to generate a MenuMap printout, see “Printing the MenuMap” on page 34).

5. To specify usable printer memory size, click the **Memory...** button. The driver automatically adjusts font cache size according to the memory option selected under **Installed**.



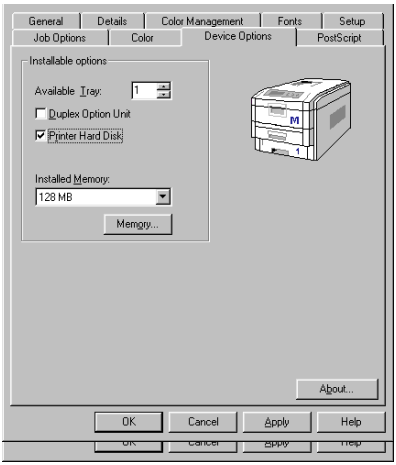
6. Click **OK** twice.

For the Internal Hard Disk Drive

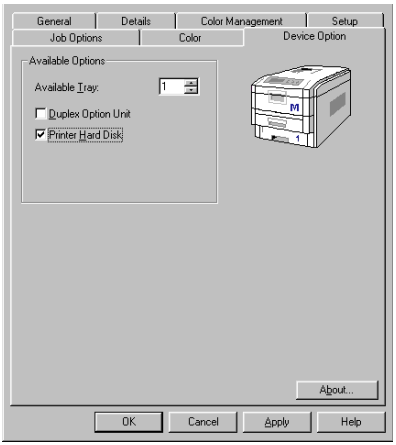
PostScript or PCL Driver

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. On the **Device Options** tab, check **Printer Hard Disk**.

PostScript Driver



PCL Driver



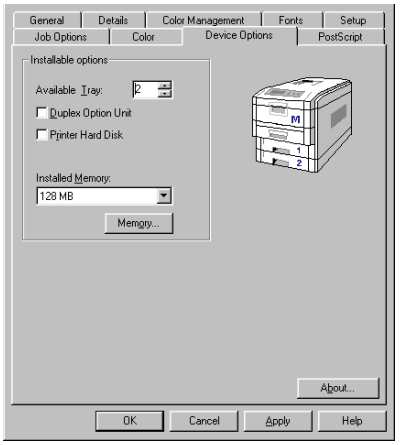
4. Click **OK**.

For Additional Paper Trays

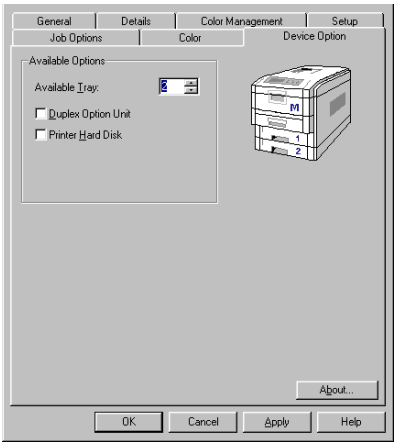
PostScript or PCL Driver

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. On the **Device Options** tab, select the number of trays installed (not including the Multi Purpose tray).

PostScript Driver



PCL Driver



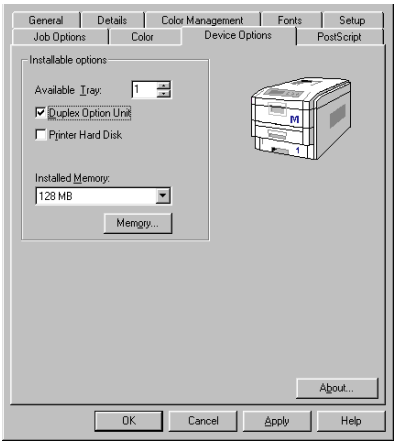
4. Click **OK**.

For the Duplex Unit

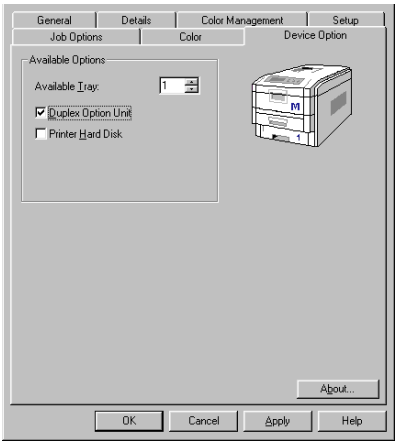
PostScript or PCL Driver

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Options** tab, check **Duplex Option Unit**.

PostScript Driver



PCL Driver



4. Click **OK**.

Changing Defaults for Paper Feed, Size and Media in the Driver

The normal default for these items is automatic detection.

NOTE

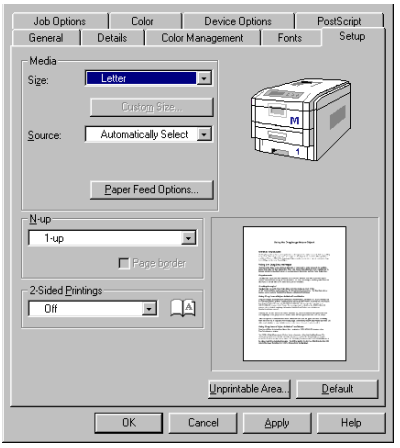
If the defaults set manually in the printer menu differ from those you set in the printer driver, the printer will not print and the LCD will display an error message.

The following printer driver instructions are given as a guide only. Some software applications require the paper feed, size and media settings to be selected from within the software (under Page Setup).

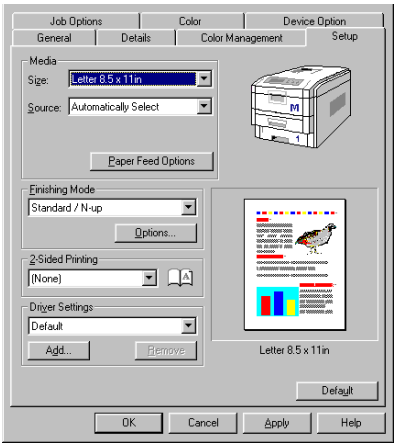
PostScript and PCL Drivers

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Setup** tab.

PostScript Driver



PCL Driver



4. Select the required paper size under **Size**.

5. Select the required paper feed under **Source**.

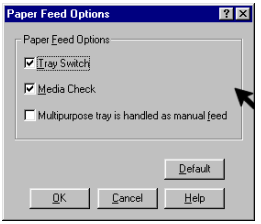
> **NOTE**
>
> **If a paper tray is selected the Type or Weight field becomes visible.**

6. Select the required paper type under **Type** (PostScript) or **Weight** (PCL).

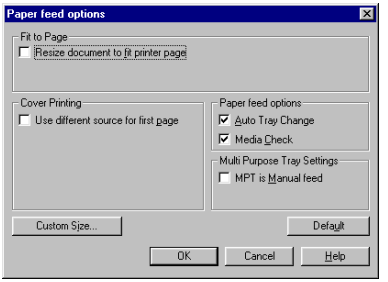
> **NOTE**
>
> **If Printer Setting is selected, make sure the printer has been set to the correct media type.**

7. Click **Paper Feed Options** and make any other selections then click **OK**.

PostScript Driver



PCL Driver



8. Click **OK** to close the printer dialog box.

Network Printer Status Utility

- Available on TCP/IP network connection only.

The Network Printer Status utility is available if your administrator has installed it. If the utility is installed, you will see the following changes to the printer driver **Properties** dialog box:

- a new **Status** tab is added
- an **Option** button is added to the **Device Option** tab.

This utility allows you to view (but not change) the status of the following on the **Status** tab:

- paper trays installed and the media assigned to them.
- total size and percentage used of disk/memory.
- percentage of toner remaining.

Important!

If you select **Automatic Status Update** in the **Status** tab, the driver will automatically ping the printer for the latest status information every time you open the **Properties** dialog box. This causes a significant delay until the Properties box opens. To avoid this, use the **Update Status** button in the **Status** tab to manually update the information on demand.

Windows Me/98/95 Operation

This section explains how to set up color printing and how to use the printer's features including:

- N-up printing (see page 224)
- Custom page sizes (see page 226)
- Selecting print resolution (see page 230)
- Duplex printing (see page 231)
- Watermarks (see page 235)
- Collating (see page 239)
- Font substitution (see page 240)
- Proof and Print (see page 241)
- Secure print: printing confidential documents (see page 245)
- Storing files to the hard disk drive (see page 248)
- Printing posters (see page 251)

NOTE

Most applications allow the printer properties to be accessed from within the document print dialog box.

Factors That Affect Color Printing

The PCL and PostScript printer drivers supplied with your printer provide several controls for changing the color output. For general use the default driver settings produce good results for most documents.

Many applications have their own color settings, and these may override the settings in the printer driver. Please refer to the documentation for your software application for details on how that particular program's color management functions.

If you wish to manually adjust the color settings in your printer driver, please be aware that *color reproduction is a complex topic, and there are many factors to take into consideration*. Some of the most important factors are listed below.

Differences Between the Range of Colors a Monitor or Printer Can Reproduce

- Neither a printer nor a monitor is capable of reproducing the full range of colors visible to the human eye. Each device is restricted to a certain range of colors. In addition to this, a printer cannot reproduce all of the colors displayed on a monitor, and vice versa.
- Both devices use very different technologies to represent color. A monitor uses Red, Green and Blue (RGB) phosphors (or LCDs), a printer uses Cyan, Yellow, Magenta and Black (CMYK) toner or ink.
- A monitor can display very vivid colors such as intense reds and blues and these cannot be easily produced on any printer using toner or ink. Similarly, there are certain colors, (some yellows for example), that can be printed, but cannot be displayed accurately on a monitor. This disparity between monitors and printers is often the main reason that printed colors do not match the colors displayed on screen.

Viewing Conditions

A document can look very different under various lighting conditions. For example, the colors may look different when viewed standing next to a sunlit window, compared to how they look under standard office fluorescent lighting.

Printer Driver Color Settings

The driver settings for Manual color can change the appearance of a document. There are several options available to help match the printed colors with those displayed on screen. These options are explained in subsequent sections of this User Manual.

Monitor Settings

The brightness and contrast controls on your monitor can change how your document looks on-screen. Additionally, your monitor color temperature influences how "warm" or "cool" the colors look.

NOTE

Several of the Color Matching options make reference to your monitor's Color Temperature. Many modern monitors allow the color temperature to be adjusted using the monitor's control panel.

There are several settings found on a typical monitor:

- **5000k***
  Warmest; yellowish lighting, typically used in graphics arts environments.
- **6500k**
  Cooler; approximates daylight conditions.
- **9300k**
  Cool; the default setting for many monitors and television sets.

*k = degrees Kelvin, a measurement of temperature

How Your Software Application Displays Color

Some graphics applications such as CorelDRAW® or Adobe® Photoshop® may display color differently from "office" applications such as Microsoft® Word. Please see your application's online help or user manual for more information.

Paper Type

The type of paper used can also significantly affect the printed color. For example, a printout on recycled paper can look duller than one on specially formulated glossy paper.

Choosing a Color Matching Method

There is no one way to achieve a good match between the document displayed on your monitor, and its printed equivalent. There are many factors involved in achieving accurate and reproducible color.

However, the following guidelines may help in achieving good color output from your printer. There are several suggested methods, depending on the type of document you are printing.

NOTE

These suggestions are for guidance only. Your results may vary depending on the application from which you are printing. Some applications will override any color matching settings in the printer driver without warning.

RGB or CMYK?

The guidelines for choosing a color matching method makes distinctions between Red, Green, Blue (RGB) and Cyan, Magenta, Yellow, Black (CMYK).

Generally, most documents you print will be in RGB format. This is the most common, and, if you do not know your document's color mode, assume that it is RGB.

Typically CMYK documents are only supported in professional Desktop Publishing and Graphics applications.

Matching Photographic Images

RGB Only

Sharp Color Matching (see page 217) is generally a good choice. Select a matching method appropriate to your monitor.

RGB or CMYK

If you are printing photographic images from a graphics application such as Adobe Photoshop, you may be able to use Soft-Proofing to simulate the printed image on your monitor. To do this, you can use the provided ICC-Profiles (see “Windows ICM Color Matching” on page 222), and then print using the ICC profiles as the Print Space (or Output space).

Matching Specific Colors (e.g., a Company Logo)

RGB Only

- Sharp Color Matching (see page 217), and the sRGB setting: PCL or PS driver.
- PostScript Color Matching using the Absolute Colorimetric option (see page 219).
- Use the Color Swatch Utility to print out a chart of RGB swatches and enter your desired RGB values in your application's color picker—PS only (see page 215).

RGB or CMYK

- If you are printing from a graphics application such as Adobe Photoshop, you may be able to use Soft-Proofing to simulate the printed image on your monitor. To do this, you can use the provided ICC-Profiles (see “Windows ICM Color Matching” on page 222), and then print using the ICC profiles as the Print Space (or Output space) (PS only).
- Alternatively, use PostScript Color Matching with the Absolute Colorimetric setting (see page 219).

Printing Vivid Colors

RGB Only

- Use Sharp Color Matching (see page 217), with the Monitor 6500k Vivid, sRGB or Digital Camera settings (PCL or PS).

RGB or CMYK

- Use PostScript Color Matching (see page 219) with the Saturation option.

Color Matching: PCL Driver

Color Matching Options

The Color Matching options in the PCL driver can be used to help match your printed colors to the ones displayed on your monitor.

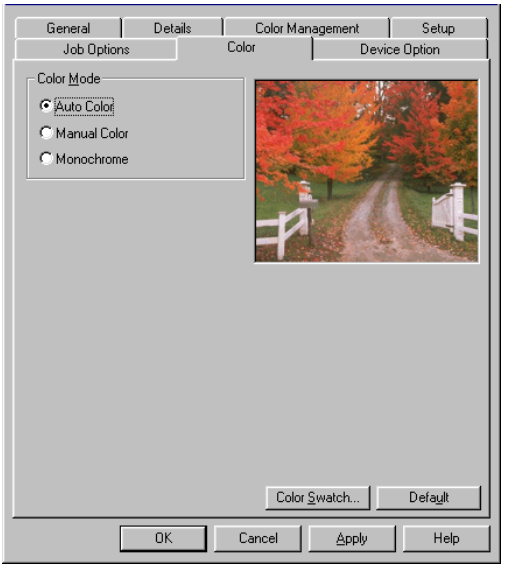
NOTE

The PCL driver's color options are only designed to work with RGB data.

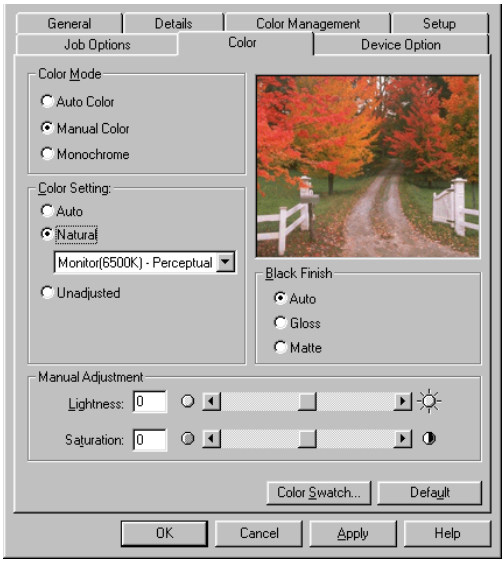
If you are printing CMYK data, we recommend you use the PostScript driver.

To manually set the color matching options in the PCL driver:

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the appropriate printer name and click **File**, then **Properties**.
3. Click the **Color** tab.



a. Click **Manual Color** under **Color Mode**, then click **Natural** under **Color Setting**.



4. Select the method you wish to use:

Monitor (6500K) Perceptual
Optimized for printing photographs when using a monitor with a color temperature of 6500K.

Monitor (6500K) Vivid
Optimized for printing bright colors when using a monitor with a color temperature of 6500K. Ideal for office graphics.

Monitor (9300K)
Optimized for printing photographs when using a monitor with a color temperature of 9300K.

Digital Camera
Optimized for printing photographs taken with a digital camera. This tends to produce prints with lighter and brighter colors. For some photographs, other settings may be better depending on the subjects and the conditions under which they were taken.

sRGB
Optimized for matching specific colors, such as a company logo color. The colors within the printer's color gamut are printed without any modification, and only colors that fall outside the printable colors are modified.

5. Set any other required parameters using the on-line Help for guidance.
6. When you are done, click **OK** to close the Properties dialog box.

The Print Color Swatch Utility

For use with applications which allow you to set your own RGB values for colors.

The Color Swatch utility prints out charts of sample colors. Listed below each color are the corresponding RGB (Red, Green, Blue) values to use in your application to match that printed color.

An example of using the Print Color Swatch function:

You wish to print a logo in a particular shade of red. The steps you would follow are:

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File**, then **Properties**.
3. Click the **Color** tab.
4. Click **Color Swatch** to print the color swatch samples.
5. Select the shade of red that best suits your needs and make a note of the RGB value below that particular shade.
6. Using your program's color picker, enter these same RGB values (from step 5), and change the logo to that color.

NOTE

The RGB color displayed on your monitor may not necessarily match what was printed on the color swatch. If this is the case, it is probably due to the difference between how your monitor and printer reproduce color.

Color Matching: PostScript Driver

Color Matching Options

The PostScript driver offers several different methods of controlling the color output of the printer.

Some of the color matching options only work on certain types of data. The table below summarizes the various color-matching options available in the PostScript driver, and what types of data they affect.

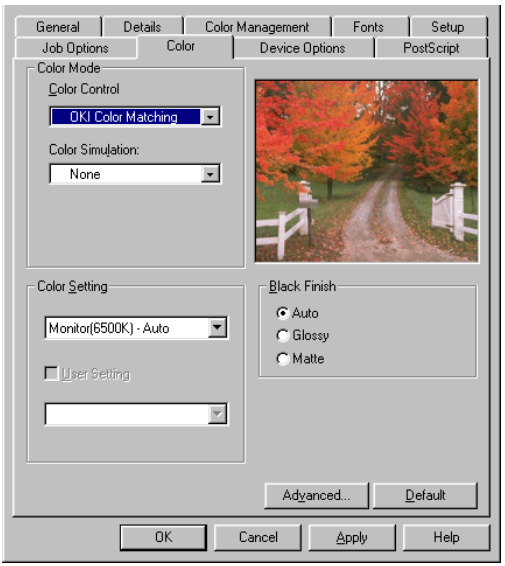
Color Matching Option	RGB data	CMYK data
Sharp Color Matching	Yes	No
PostScript Color Matching	Yes	Yes
Windows ICM Matching[a]	Yes	No
Using ICC Profiles	Yes	No

a. Not Windows NT 4.0

To manually set the color matching options in the PostScript driver:

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** → **Properties**.

3. Click the **Color** tab.

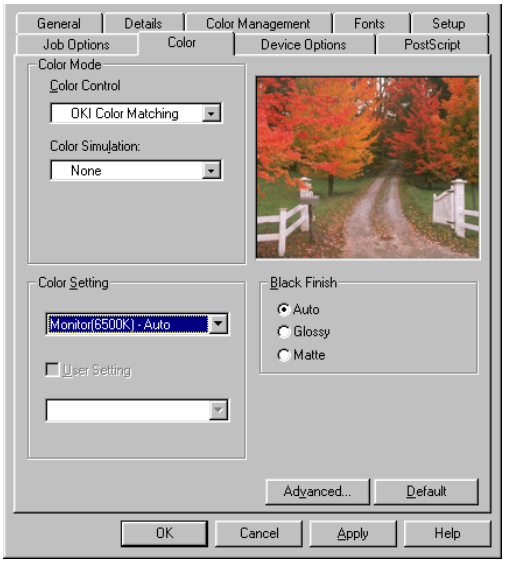


4. Select the method to use from the **Color Control** drop-down list box under **Color Mode**:

a. Color Control = Sharp Color Matching

This is Sharp's proprietary color matching system, and affects *RGB data only*.

Select the type to be used from the drop-down list box under **Color Setting** :



- **Monitor (6500K) Auto**
  Optimized for printing general documents when using a monitor with a color temperature of 6500K.
- **Monitor (6500K) Perceptual**
  Optimized for printing photographs when using a monitor with a color temperature of 6500K.
- **Monitor (6500K) Vivid**
  Optimized for printing bright colors when using a monitor with a color temperature of 6500K. Ideal for office graphics and text.
- **Monitor (9300K)**
  Optimized for printing photographs when using a monitor with a color temperature of 6500K.
- **Digital Camera**
  Optimized for printing photographs taken with a digital camera. This tends to produce prints with lighter and brighter colors. For some photographs, other settings may be better

depending on the subjects and the conditions under which they were taken.

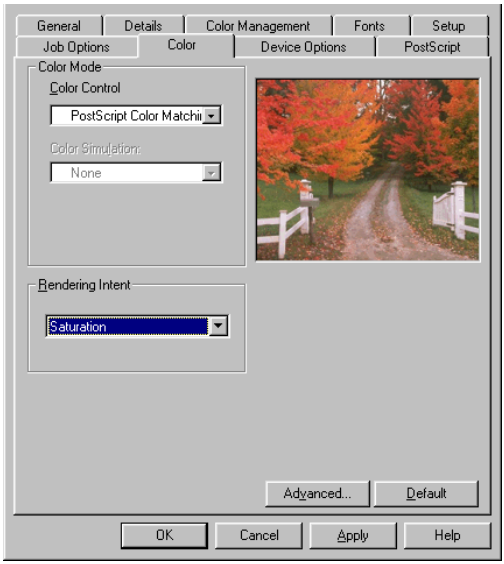
- **sRGB**
  Optimized for matching specific colors, such as a company logo color.

  The colors within the printer's color gamut are printed without any modification, and only colors that fall outside the printable colors are modified.

b. Color Control = PostScript Color Matching

This uses PostScript Color Rendering Dictionaries built-in to the printer, and affects both RGB and CMYK data.

Select the rendering type from the **Rendering Intent** drop-down list box.



- **Rendering Intents**

  When a document is printed, a conversion takes place from the document's color space to the printer color space. The rendering intents are essentially a set of rules that determine how this color conversion takes place.

  The rendering intents that the printer driver provides are listed below:

  – *Auto*

    Best choice for printing general documents.

  – *Perceptual*

    Best choice for printing photographs. Compresses the source gamut into the printer's gamut whilst maintaining the overall appearance of an image. This may change the overall appearance of an image as all the colors are shifted together.

  – *Saturation*

    Best choice for printing bright & saturated colors if you don't necessarily care how accurate the colors are. This makes it the recommended choice for graphs, charts, diagrams etc. Maps fully saturated colors in the source gamut to fully saturated colors in the printer's gamut.

  – *Relative Colorimetric*

    Good for proofing CMYK color images on a desktop printer. Much like Absolute Colorimetric, except that it scales the source white to the (usually) paper white; i.e. unlike Absolute Colorimetric, this attempts to take the paper white into account.

  – *Absolute Colorimetric*

    Best for printing solid colors and tints, such as Company logos etc. Matches colors common to both devices exactly, and clips the out of gamut colors to their nearest printed equivalent. Tries to print white as it appears on screen. The white of a monitor is often very different from paper white, so this may result in color casts, especially in the lighter **areas of an image.**

c. Color Control = Windows ICM

This is the color management system built into Windows. See “Windows ICM Color Matching” on page 222.

d. Color Control = Using ICC Profiles

This option provides a method of matching RGB colors similar to Windows ICM matching. See “Using ICC Profiles Feature” on page 223.

e. Color Control = No Color Matching

Use this option to switch off all printer color matching.

f. Color Control = Print in greyscale

This option prints all documents as monochrome.

Windows ICM Color Matching

- ICM is the color management system built into Windows.
- Affects **RGB data only**.
- Can be associated with either the PCL or PS driver

Windows ICM uses ICC profiles for your monitor and printer; these profiles describe the colors that your device is capable of reproducing. ICC profiles can be associated with your printer via the **Color Management** tab of the printer driver.

Depending on how you have installed the printer driver, the color profiles may already be associated with the driver.

To associate ICC Color Profiles with the printer driver:

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File**, then **Properties**.
3. Click the **Color Management** tab.
4. Under "**Color Profiles currently associated with this printer**", you should see the names of profiles that match your printer model. If you do not see any profiles associated with the driver, click "**Add…**" and locate the ICC profiles for your printer.

Windows ICM uses the information in these profiles to convert colors in your documents to colors that the printer can reproduce. The way in which this conversion is performed can be controlled via the ICM Intent control in the printer driver

NOTE

The Color Match "Using ICC Profiles" feature provides an alternative to Windows ICM. It is similar to Windows ICM, but offers several additional features.

Using ICC Profiles Feature

- Affects **RGB data only**.

This provides a method of matching RGB colors similar to Windows ICM matching. The main advantage it has over Windows ICM color matching is that it provides a method of printing using both input and output profiles. Windows ICM matching only allows output profiles to be chosen.

Input Profiles (e.g., a digital camera) provide information about the color in the original device that was used to capture or display the image data. For example, an input device could be a scanner, digital camera, or monitor.

Output Profiles (e.g., the printer) provide information about the device to which you are printing.

The Using ICC Profiles feature uses both the input and output profiles to generate a CRD (Color Rendering Dictionary), which is used to match the colors as closely as possible.

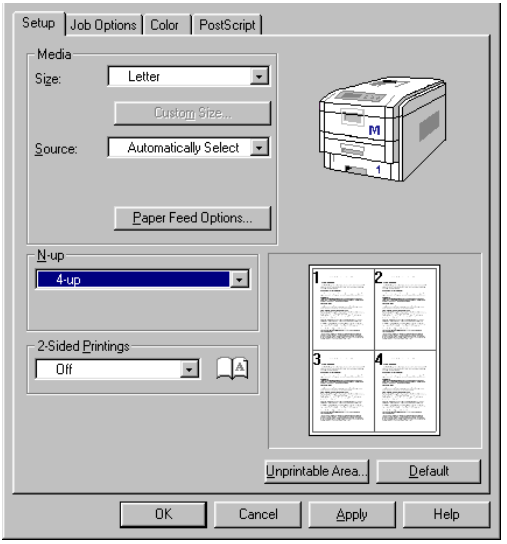
NOTE

This feature may not work for all application programs. However, many professional graphics applications offer a similar feature in their print settings, with the ability to choose a source (input) color space, and a print (output) color space

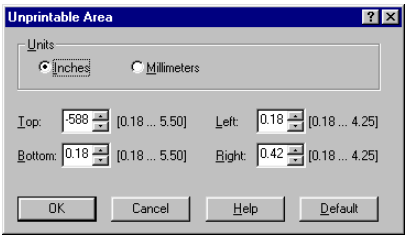
Printing Multiple Pages on One Sheet (N-up Printing)

N-Up Printing Using the PostScript Driver

1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate PS driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Setup** tab, under **N-up**, select the required number of pages per sheet.



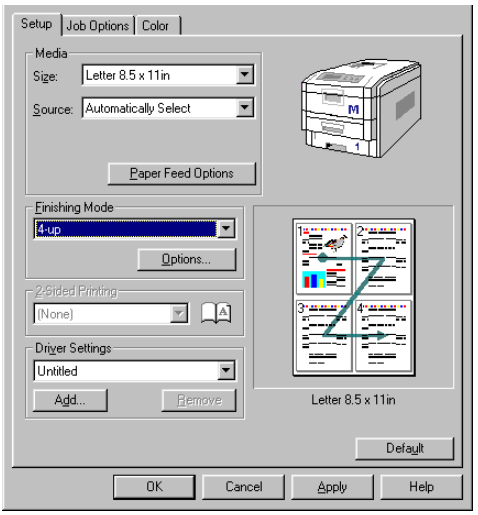
4. Click the **Unprintable Area** button and set the margin parameters, then click **OK**.



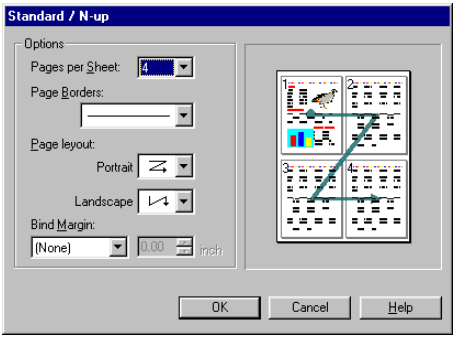
5. Click **OK**, then print the document.

N-Up Printing Using the PCL Driver

1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate PCL driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Setup** tab, under **Finishing Mode**, select the required number of pages per sheet.



4. Click **Options** and select the page borders and layout, then click OK.



5. Click **OK**, then print the document.

Printing Custom Page Sizes

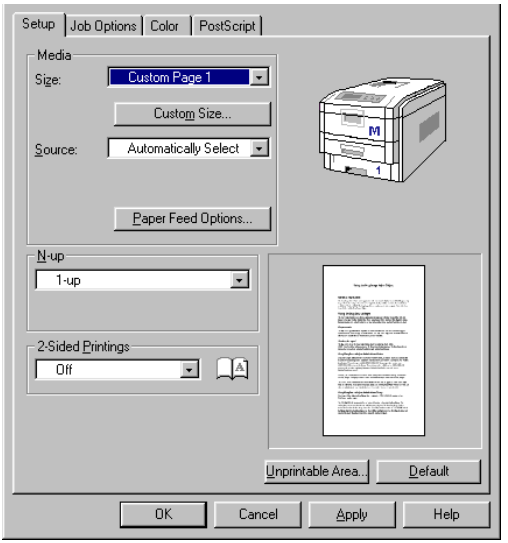
Custom page sizes can only be printed from the multi purpose tray. The printer media size for the multi purpose tray must be manually set in the driver to the custom paper size before use (range 3½ to 8½ inches [89 to 216 mm] wide x 5 to 14 inches [127 to 356 mm] long).

Printing Custom Pages Using the PostScript Driver

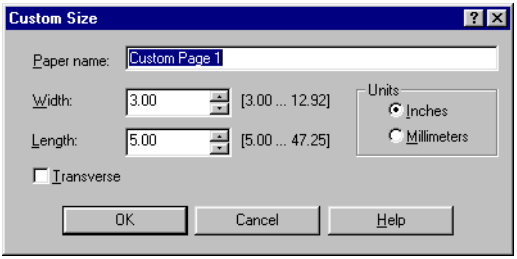
NOTE

A maximum of three custom paper sizes can be defined in the PostScript driver.

1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate PS driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. Click the **Setup** tab, then select **Custom Page 1**, **Custom Page 2** or **Custom Page 3** in the **Size** drop-down list under **Media**.



4. Click the **Custom Size** button.



5. Type in the name you wish to use for the custom paper size in the **Paper name** box. Enter the width and length for the custom paper and select **Transverse** if you wish to rotate the image by 90 degrees.
6. Click **OK**.
7. Check that the name of the custom paper size appears in the **Size** box.
8. Click **OK** to close the Properties dialog box.
9. Print the document

Printing Custom Pages Using the PCL Driver

NOTE

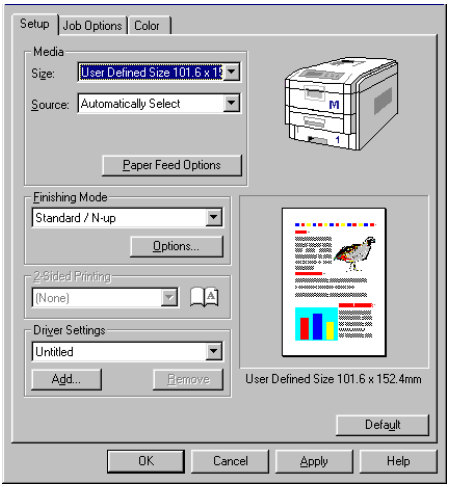
Up to 32 custom page sizes can be defined in the PCL driver.

1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate PCL driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. Click the **Setup** tab, then select **User Defined**, in the **Size** box under **Media**.
   The Set Free Size dialog box appears.

NOTE

You may see a Warning dialog box indicating a conflict. If you do, click OK and the driver will automatically make the needed changes to correct for the conflict.

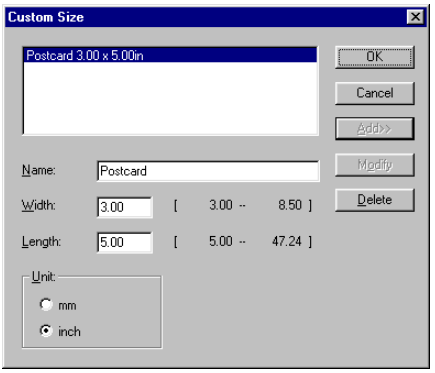
4. Select the unit, then enter the **Width** and **Length** measurements and click **OK**. **User Defined Size** should appear in the **Size** box on the **Setup** tab.



NOTE

To save the setting for future use:

- **Click Paper Feed Options, then click Custom Size.**
- **Enter the relevant information in Width and Height and give your document size a name under Name.**
- **Click Add.**



- **Click OK twice.**
  The new Custom Page Size is added to the bottom of the Paper Size list.

5. Click **OK** to close the Properties dialog box
6. Print the document.

Changing the Resolution for A Print Job

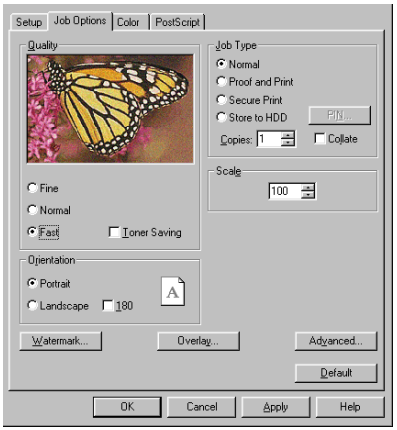
NOTE

These instructions explain how to change the settings as you are printing a job. If you wish to change the settings to apply to all jobs (default settings):

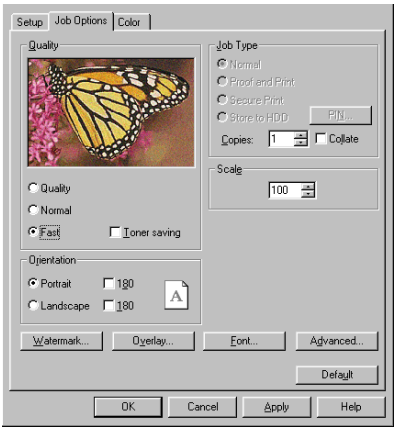
- **Click Start → Settings → Printers.**
- **Right click the appropriate printer name. then select Properties.**
- **Follow steps 3, etc., below: note that the Properties screen for setting defaults will have more tabs.**

1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate driver, then click **Properties** (or **Setup**, or your application's equivalent).
1. Click the **Job Options** tab.
2. Select the required printing resolution under **Quality**..

PostScript Driver



PCL Driver



3. Select **Toner Saving** if appropriate.
4. Click **OK** and print the document.

Duplex Printing
(Printing on Both Sides of the Paper)

NOTE

The optional duplex unit must be installed in the printer and enabled before duplex printing can be carried out.

- Standard paper sizes only.
- Paper weight range 20 to 28 lb. US Bond (75 to 105 g/m^2).
- Paper must be loaded print side *up*.
- Only Tray 1, optional Trays 2 and 3, and the High Capacity Feeder trays can be used for duplex printing. The MP tray *cannot* be used for duplex printing.

NOTE

These instructions explain how to change the settings as you are printing a job. If you wish to change the settings to apply to all jobs:

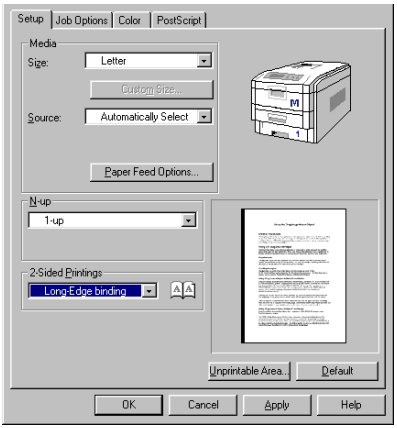
- **Click Start → Settings → Printers.**
- **Right click the appropriate printer name. then select Properties.**
- **Follow steps 3, etc., below: note that the Properties screen for setting defaults will have more tabs.**

To print a document on both sides of the paper:

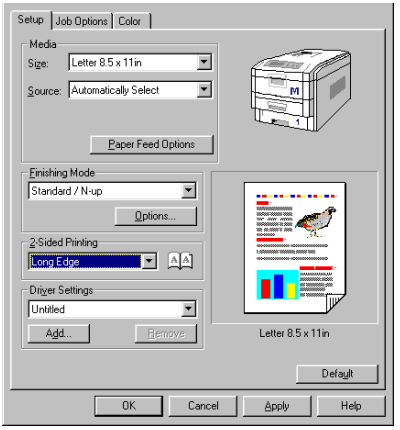
1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate driver, then click **Properties** (or **Setup**, or your application's equivalent).

3. On the **Setup** tab, from **2-sided Printing** select **Long Edge binding** or **Short Edge binding**.

PostScript Driver



PCL Driver



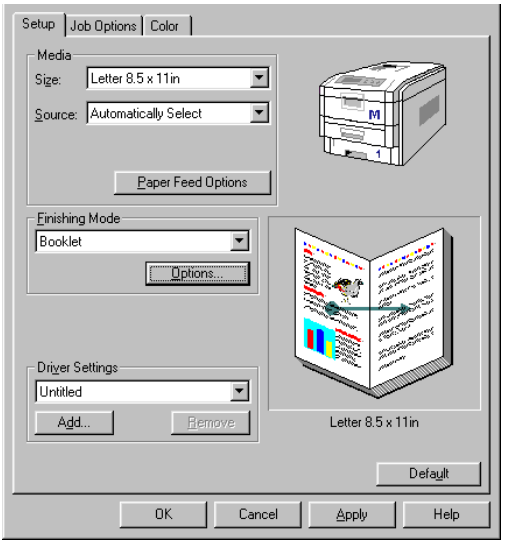
4. Click **OK** and print the document.

Printing Booklets: PCL Only, Windows Me Only

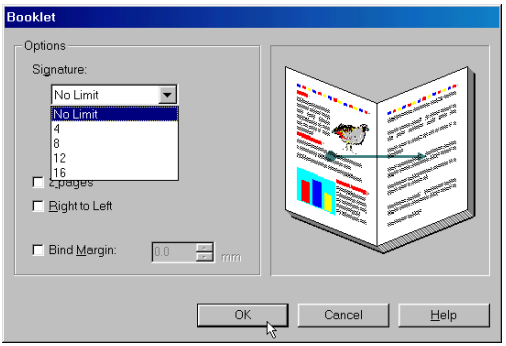
NOTES

- **Available only in the Windows Me Operating System (not available for Windows 98 or 95).**
- **Available in the PCL printer driver only (but not on some network connections: see the Help file).**
- **Some software applications may not support booklet printing.**
- **The right-to-left setting allows a booklet to be printed for right to left reading, which is used in some languages.**

1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate PCL driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Setup** tab, under **Finishing Mode**, select **Booklet** in the drop-down box.



4. Click **Options** and set **Signature**, **2Pages**, **Right to Left** and **Bind Margin** as required, then click **OK**.

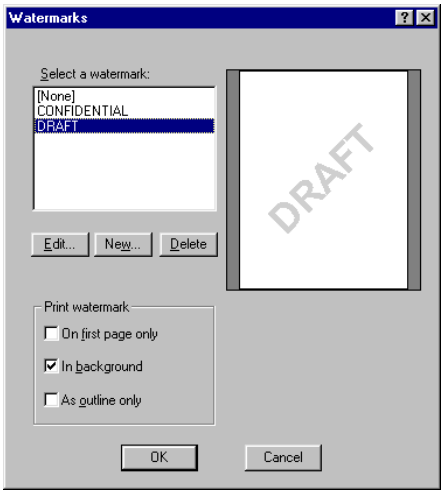


5. Click **OK** and print the document.

Printing Watermarks

Printing Watermarks Using the PostScript Driver

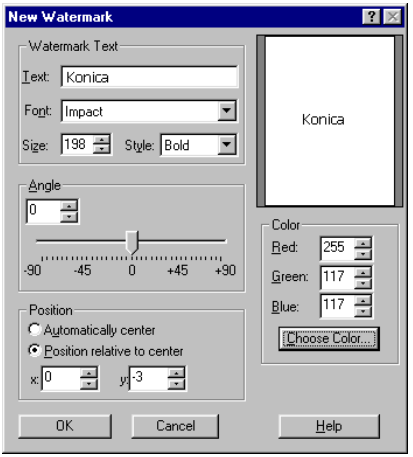
1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate PS driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. Click the name of the watermark you wish to use in the **Select a watermark** list.



NOTE

To create a new watermark or edit an existing watermark:

- **Click the New or Edit button.**
- **Enter the text for the watermark and select the font, size, angle, etc., to be used.**

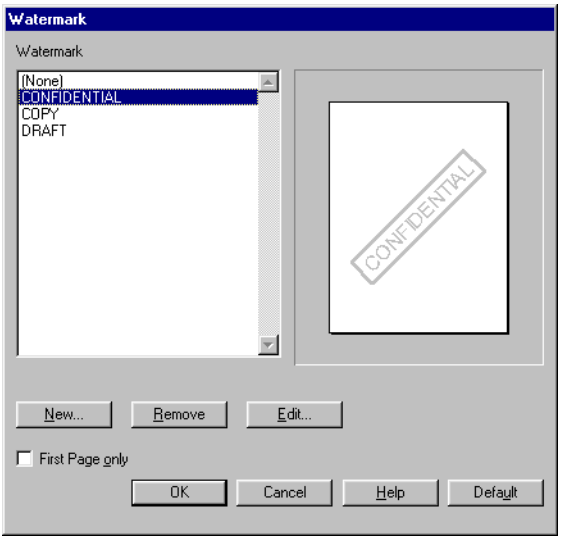


- **Click OK.**

4. Select your choices as to how the watermark will print under **Print watermark**.
5. Click **OK** twice and print the document.

Printing Watermarks Using the PCL Driver

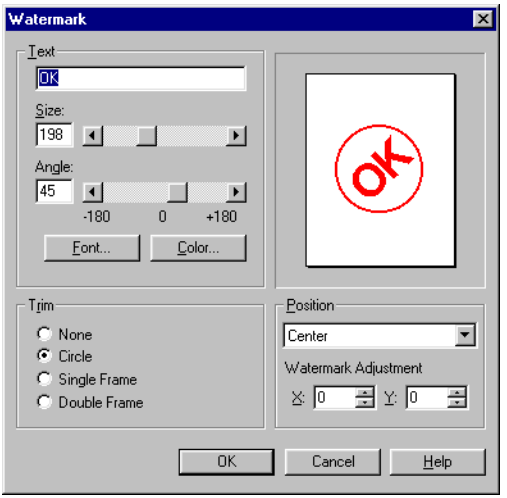
1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate PCL driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. Click the **Job Options** tab, then click **Watermark**.
   The Watermark dialog box appears.
4. Select a name from the **Watermark** list.



NOTE

To create a new watermark or edit an existing watermark:

- **Click the New or Edit button.**
- **Enter the text for the watermark and select the font, size, angle, etc., to be used.**



- **Click OK.**

5. If you wish to print the watermark only on the first page of the document, select **First Page only**.
6. Click **OK** twice and print the document.

Collating

Collating can be carried out with or without a hard disk drive installed. However, printers with a hard disk drive will provide greater performance.

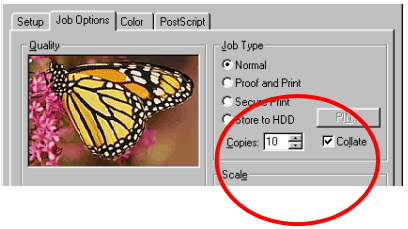
Important

If your software application has a collate option, use it instead of the collate option in the printer driver.

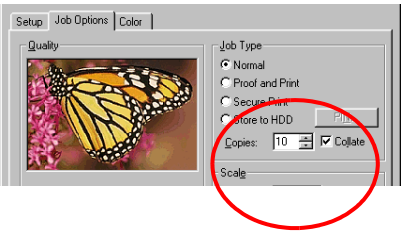
The following instructions explain how to select collating using the printer driver.

1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. Click the **Job Options** tab: under **Job Type**, enter the number of copies required and—*only if the application has no collate option*—select **Collate**.

PostScript Driver



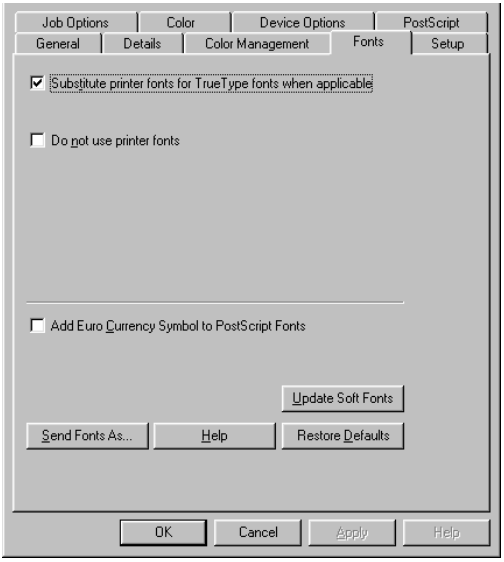
PCL Driver



4. Click **OK** and print the document.

Font Substitution: PostScript Only

1. Click **Start** → **Settings** → **Printer**.
2. Right click the appropriate PS driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. Click the **Fonts** tab, and select the type of font substitution from the various options given (use the on-line Help screen for information).



4. Click **OK** to engage the new settings and close the Properties dialog box.

Proof and Print

Proof and print allows printing of a single copy of a document for checking before printing multiple copies of the same document.

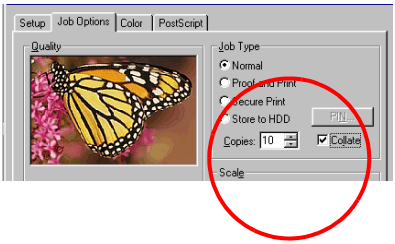
NOTES

- **The internal hard disk must be installed in the printer and enabled, to allow for spooling of the print job before final printing.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy is printed.**
- **If the software application being used has a collate print option, it must be turned OFF for proof and print to operate correctly.**
- **Proof and print may not be available in some software applications.**

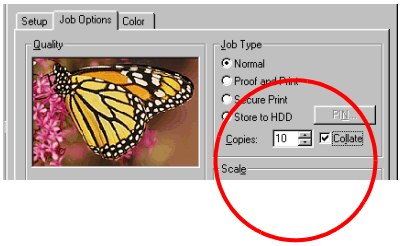
1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate driver, then click **Properties** (or **Setup**, or your application's equivalent).

3. Click the **Job Options** tab, enter the number of copies and, if required, select **Collate**.

PostScript Driver



PCL Driver

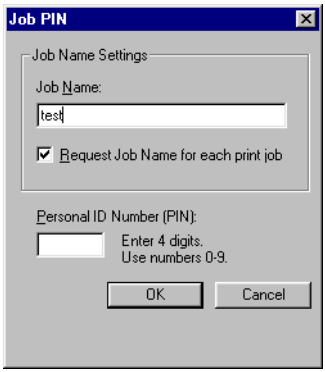


a. Under **Job Type**, select **Proof and Print**.

b. Enter a job name of up to 16 characters under **Job Name Setting** and, if required, select **Request Job Name for each print job**.

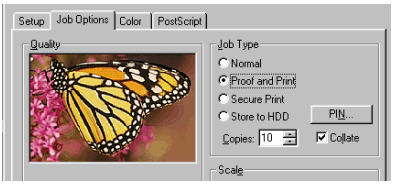
PostScript Driver

PCL Driver

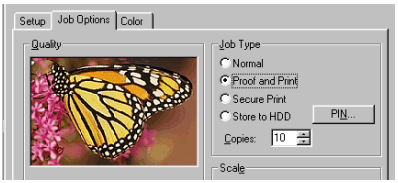


c. Type in a four digit personal ID number from 0000 to 7777, then click **OK**.

PostScript Driver



PCL Driver



4. Click **OK** to close the Properties dialog box.

5. Print the document. The document is stored on the hard disk drive, and one copy is printed for checking.

6. After checking the proof, you then print or delete (if incorrect) the remaining copies of the document using the procedures given below.

Printing Copies

1. Press the MENU button to access the **PRINT JOBS MENU**, then press the SELECT button.
2. Enter your personal ID number using the buttons on the printer control panel.
3. Press the VALUE button until **ALL JOBS** or the required job name is displayed.
4. Press the SELECT button to print the remaining copies of the document.

Deleting Copies

If the proof is not ready for printing, the job must be deleted from the printer:

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter your personal ID number using the buttons on the printer control panel.
3. Press the VALUE button until **ALL JOBS** or the required job name is displayed.
4. Press the CANCEL button to delete the remaining copies of the document.
5. When the deletion confirmation message appears, confirm by pressing the SELECT button.

Secure Printing (Printing Confidential Documents)

Secure printing or printing with passwords allows the printing of confidential documents on printers that are shared with other users.

NOTE

- **The internal hard disk must be installed in the printer and enabled to allow for spooling of the print job before final printing.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy printed.**
- **If the software application being used has a collate print option, this must be turned OFF for secure printing to operate correctly.**
- **Secure printing may not be available in some software applications.**

1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate driver, then click **Properties** (or **Setup**, or your application's equivalent).

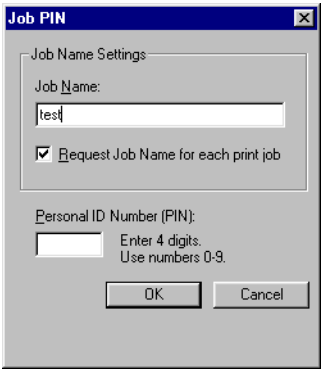
3. On the **Job Options** tab, enter the number of copies and, if required, check the **Collate** box.

   a. Under **Job Type** select **Secure Print**.

   b. Enter a job name of up to 16 characters under **Job Name** , and, if required, select **Request Job Name for each print job**.

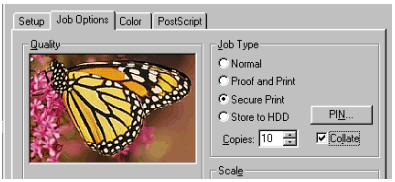
PostScript Driver

PCL Driver

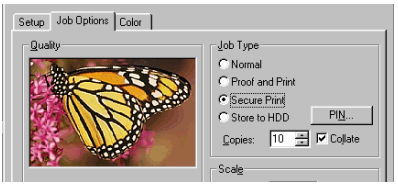


4. Type in a four digit personal ID number from 0000 to 7777, then click **OK**.

PostScript Driver



PCL Driver



5. Click **OK** to close the Properties dialog box.

6. Print the document. The document will be stored on the printer's hard disk.

7. Go to the printer and print out the document using the front panel (see below).

Printing a Confidential Document from the Front Panel

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you set above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the SELECT button.
   The document will print and be deleted from the hard disk drive.

Deleting the Confidential Document Before Printing It

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you set above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the CANCEL button to delete the job from the printer.

Store to Hard Disk

Store to hard disk (job spooling) allows print jobs to be temporarily stored on the hard disk before printing.

NOTE

- **The internal hard disk must be installed in the printer and enabled to allow for spooling of the print job before final printing.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy printed.**
- **If the software application being used has a collate print option, this must be turned OFF for store to hard disk to operate correctly.**
- **Store to hard disk may not be available in some software applications.**

1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. Click the **Job Options** tab.

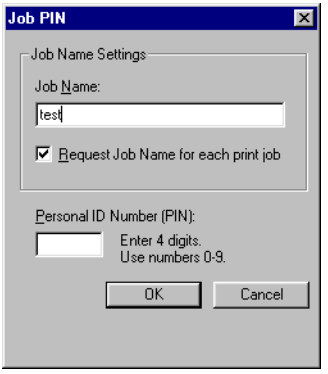
4. On the **Job Options** tab.

   a. Under **Job Type** select **Store to HDD**, enter the number of required copies and, if required, check the **Collate** box.

   b. Enter a job name of up to 16 characters under **Job Name Setting** and, if required, select **Request Job Name for each print job**..

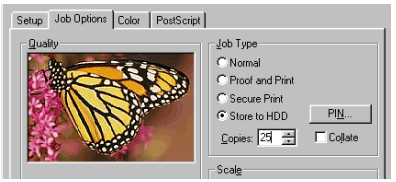
PostScript Driver

PCL Driver

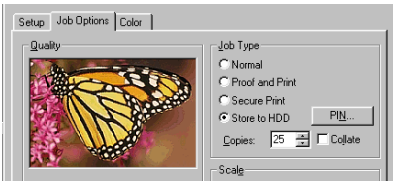


5. Type a four digit personal ID number from 0000 to 7777, then click **OK**..

PostScript Driver



PCL Driver



6. Click **OK** to close the Properties dialog box.
7. Print the document. It will be stored on the hard disk.
8. The document can then be printed or deleted using the procedures given below.

Printing Copies

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you selected above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the SELECT button to print the document.

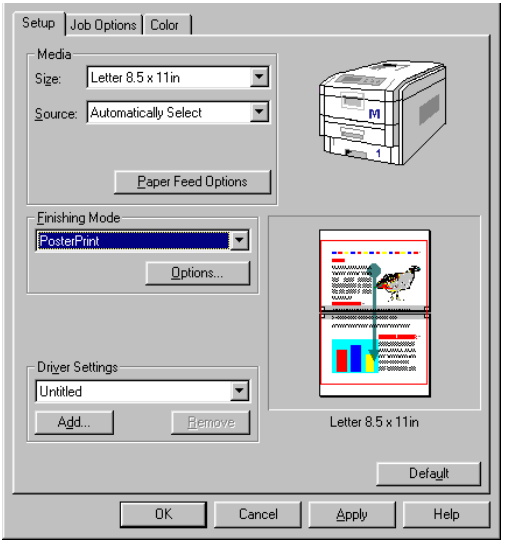
Deleting the Stored Job from the Hard Disk Drive

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you selected above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the CANCEL button to delete the remaining copies of the document.
5. When the deletion confirmation message appears, confirm by pressing the SELECT button.

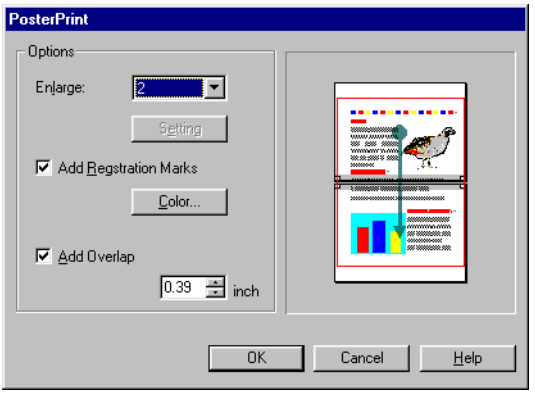
Printing Posters: PCL Only

This option allows you to configure and print posters by breaking up the document page into multiple pieces which print enlarged on separate sheets. Then the separate sheets are combined to produce a poster. It is only available with the PCL printer driver

1. Open the file in your application and select **File** → **Print**.
2. In the print dialog box, click the appropriate PCL driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. Click the **Setup** tab, under **Finishing Mode**, select **Poster Print**.



4. Click **Options...** and enter the configuration details



5. Click **OK** twice.
6. Click **OK** and print the document.

Windows NT 4.0
Printer Drivers

See your printed *Software Installation Guide* for information on installing printer drivers.

Which Printer Driver to Use?

Your printer comes with Windows drivers for PCL and Adobe® PostScript® (PS). You can install either of these, or both if you wish. Which driver you choose depends on your application.

- If you use TrueType fonts and you do not print PostScript (including ".eps" files) graphics, choose the PCL driver. This will be more efficient and give good results.
- If you use PostScript fonts or you will be printing PostScript graphics, choose the PostScript driver. In this situation performance will be faster and graphics will be printed at their best quality

NOTE

The line art graphics in this manual are PostScript. So if you plan to print parts of this manual choose the PostScript driver. Otherwise the line art graphics will only print at low resolution.

If neither driver seems to cover all your needs, you should install both drivers: select the same printer port (LPT1 or Network Port) for both drivers during the installation.

Set the driver you plan to use most of the time to be your Windows default driver. Most applications allow you to choose a different printer from within the print dialog, so you can print using the alternative driver whenever you need to.

Enabling Installed Options in the Drivers

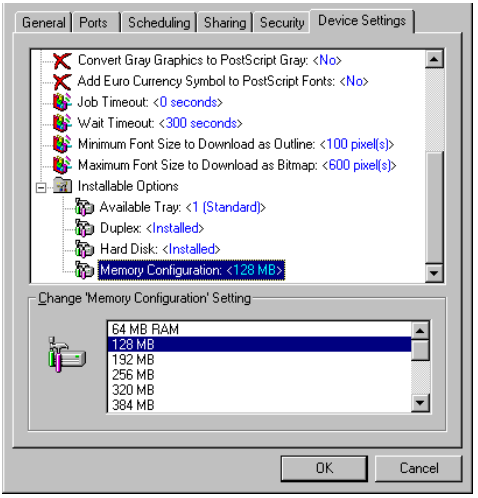
Certain options such as additional memory, the duplexer, or additional trays may be installed in your printer.

Before using the printer, you must enter the printer driver(s) and enable the options. You only need to do this once.

For Additional Memory: PostScript Driver Only

If you have additional memory in your printer, use these instructions to update the Windows PostScript driver so that it recognizes the additional memory:

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab.
4. Under **Installable Options**, click **Memory Configuration**, then select the memory in the **Change 'Memory Configuration' Setting** list which matches what is now installed in the printer, as shown in the MenuMap (to generate a MenuMap printout, see "Printing the MenuMap" on page 34)

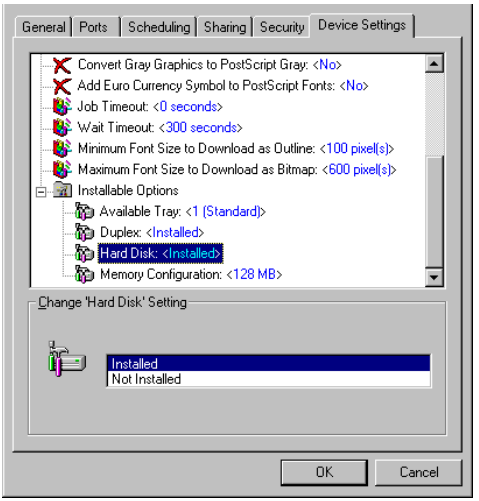


5. Click **OK** and close the Printers dialog box.

For the Internal Hard Disk Drive

PostScript Driver

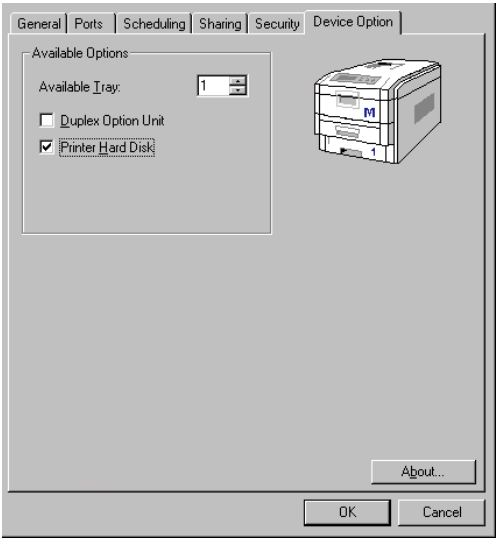
1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab.
4. Under **Installable Options**, make sure **Hard Disk** is set to **Installed**.



5. Click **OK** and close the Printers dialog box.

PCL Driver

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. On the **Device Option** tab, click **Printer Hard Disk**.

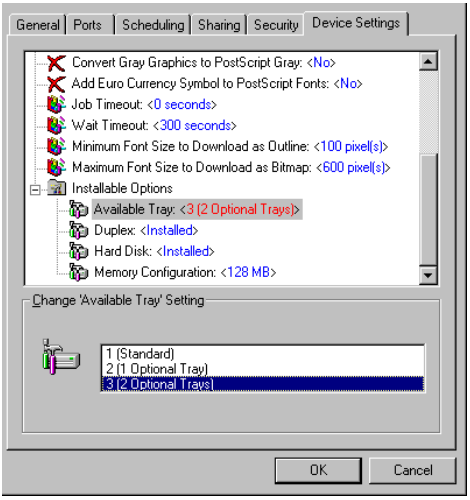


4. Click **OK** and close the Printers dialog box.

For Additional Paper Trays

PostScript Driver

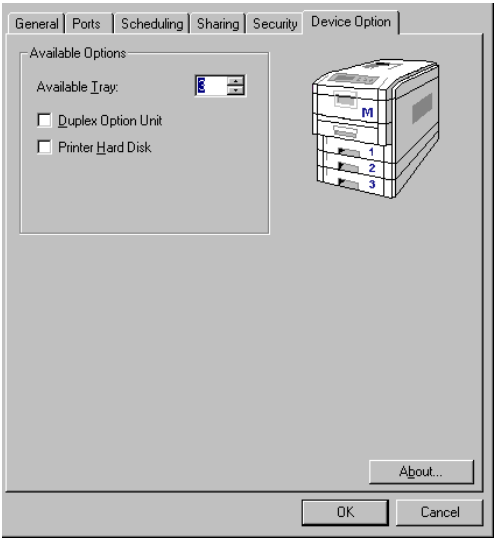
1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab. Under **Installable Options**, click **Available Trays**, then select the appropriate number of trays (not including the Multi-purpose tray) from the **Change 'Available Tray' Setting** list.



4. Click **OK** and close the Printers dialog box.

PCL Driver

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. On the **Device Option** tab, select the appropriate number of trays (not including the Multi-purpose tray).

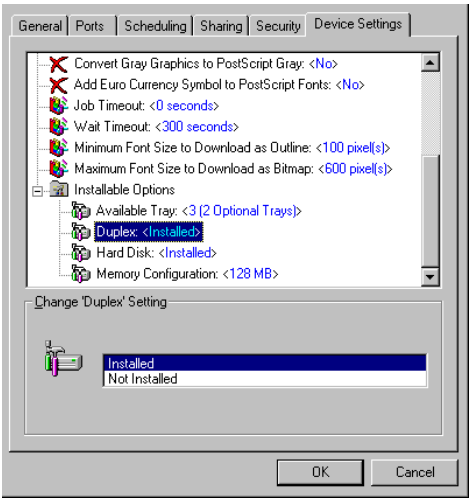


4. Click **OK** and close the Printers dialog box.

For the Duplex Unit

PostScript Driver

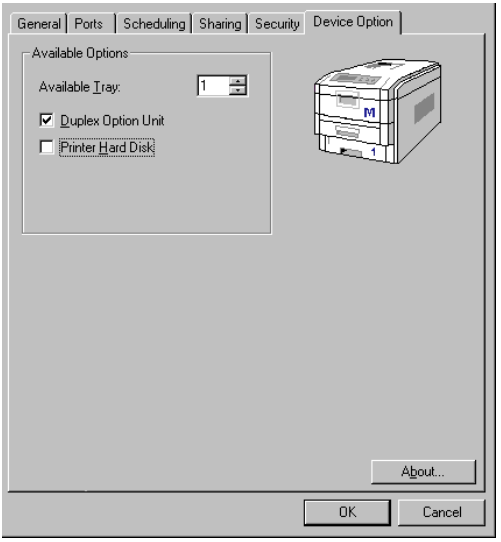
1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. Click the **Device Settings** tab. Under **Installable Options**, make sure that **Duplex** is set to **Installed**.



4. Click **OK** and close the Printers dialog box.

PCL Driver

1. Click **Start** → **Settings** → **Printers**.
2. Highlight the printer name and click **File** then **Properties**.
3. On the **Device Option** tab, click **Duplex Option Unit**.



4. Click **OK** and close the Printers dialog box.

Changing Defaults for Paper Feed, Size and Media in the Driver

The normal default for these items is automatic detection.

NOTE

If the defaults set manually in the printer menu differ from those you set in the printer driver, the printer will not print and the LCD will display an error message.

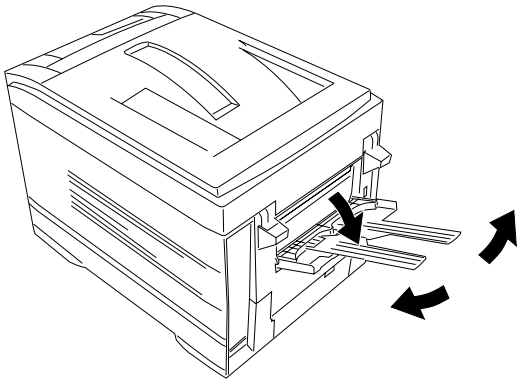
The following printer driver instructions are given as a guide only. Some software applications require the paper feed, size and media settings to be selected from within the software (under Page Setup).

PostScript Drivers

1. Click **Start** → **Settings** → **Printers**.
2. Right click the printer name and click **Document Defaults**.

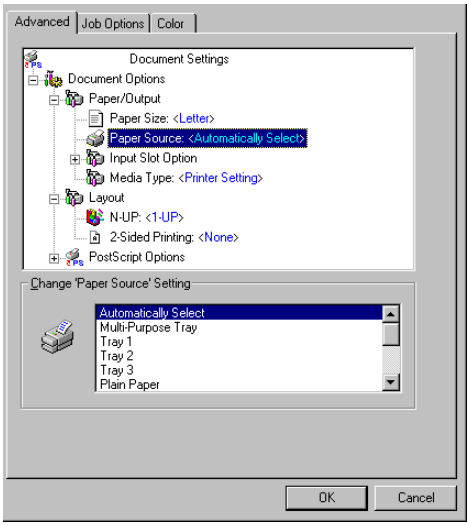
Important!

If you will be using heavy media, transparencies, envelopes or labels, make sure you open the rear exit before printing.

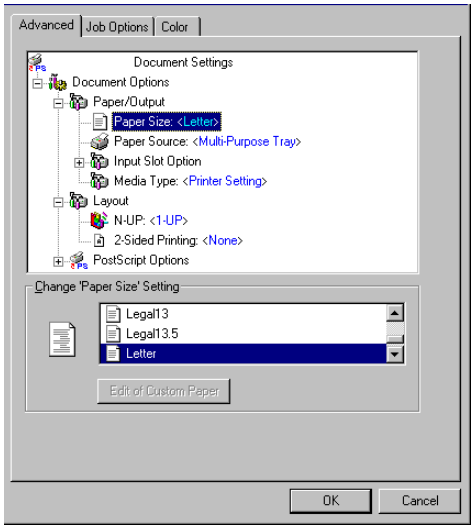


3. On the **Advanced** tab, under **Document Options** → **Paper/Output**:

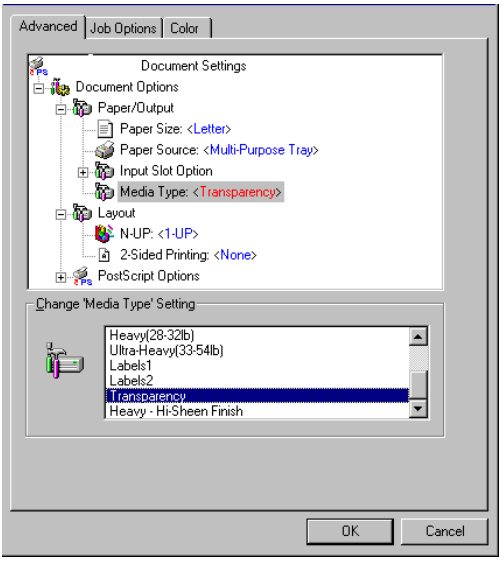
   a. Click **Paper Source** and select the paper feed in the **Change 'Paper Source' Setting** list.



   b. Click **Paper Size** and select the size in the **Change 'Paper Size' Setting** list.



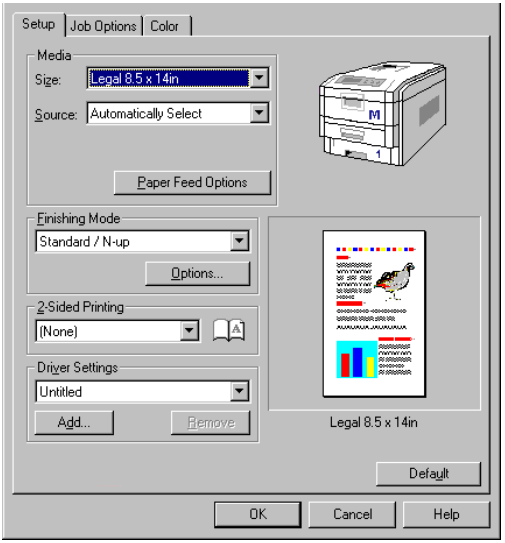
c. Click **Media Type** and select the media from the **Change 'Media Type' Setting** list.



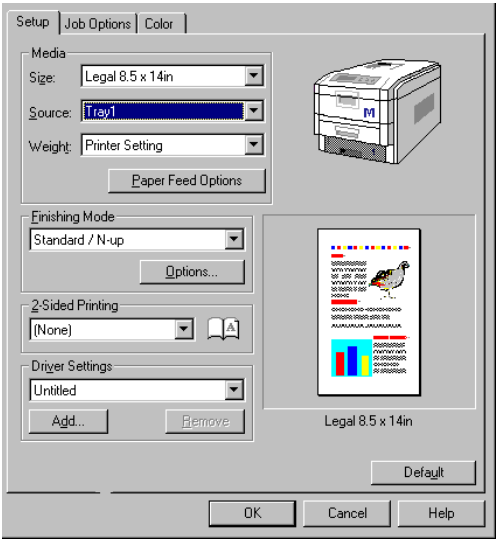
4. Click **OK** and close the Printers dialog box.

PCL Drivers

1. Click **Start** → **Settings** → **Printers**.
2. Right click the printer name and click **Document Defaults**.
3. On the **Setup** tab, under **Media**, select the required paper size in the **Size** drop-down list.



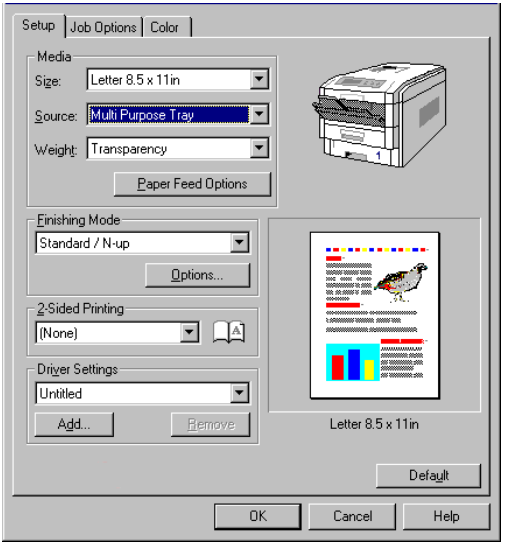
4. Select the required paper feed under **Source**.



NOTE

If a paper tray is selected, the Weight field becomes visible.

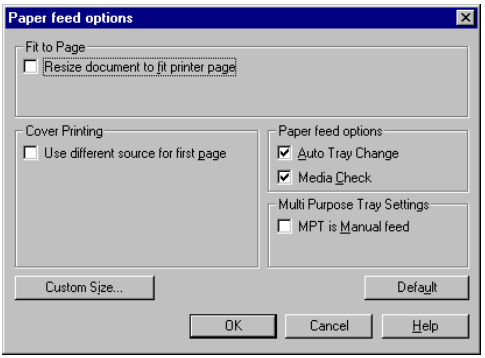
5. Select the required paper type under **Weight**.



NOTE

- **If Printer Setting is selected, make sure the printer has been set to the correct media type.**
- **If a Warning dialog box appears indicating a setting conflict, click OK and the driver will automatically change to correct the problem.**

6. Click the **Paper Feed Options** button and make any other selections then click **OK**.



7. Click **OK** twice and close the Default dialog box.

Network Printer Status Utility

- Available on TCP/IP network connection only.

The Network Printer Status utility is available if your administrator has installed it. If the utility is installed, you will see the following changes to the printer driver **Properties** dialog box:

- a new **Status** tab is added.
- an **Option** button is added to the **Device Option** tab.

This utility allows you to view (but not change) the status of the following on the **Status** tab:

- paper trays installed and the media assigned to them.
- total size and percentage used of disk/memory.
- percentage of toner remaining.

Important!

If you select **Automatic Status Update** in the **Status** tab, the driver will automatically ping the printer for the latest status information every time you open the **Properties** dialog box. This causes a significant delay until the Properties dialog box opens. To avoid this, use the **Update Status** button in the **Status** tab to manually update the information on demand.

Windows NT 4.0

Operation

This section explains how to set up color printing and how to use the printer's features including:

- N-up printing (see page 282)
- Custom page sizes (see page 284)
- Selecting print resolution (see page 290)
- Duplex printing—printing on both sides of the paper (see page 291)
- Watermarks (see page 296)
- Collating (see page 298)
- Proof and Print (see page 299)
- Secure print: printing confidential documents (see page 302)
- Storing files to the hard disk drive (see page 305)
- Printing posters (see page 308)

NOTE

Most applications allow the printer properties to be accessed from within the document print dialog box.

Factors That Affect Color Printing

The PCL and PostScript printer drivers supplied with your printer provide several controls for changing the color output. For general use the default driver settings produce good results for most documents.

Many applications have their own color settings, and these may override the settings in the printer driver. Please refer to the documentation for your software application for details on how that particular program's color management functions.

If you wish to manually adjust the color settings in your printer driver, please be aware that *color reproduction is a complex topic, and there are many factors to take into consideration*. Some of the most important factors are listed below.

Differences Between the Range of Colors a Monitor or Printer Can Reproduce

- Neither a printer nor a monitor is capable of reproducing the full range of colors visible to the human eye. Each device is restricted to a certain range of colors. In addition to this, a printer cannot reproduce all of the colors displayed on a monitor, and vice versa.
- Both devices use very different technologies to represent color. A monitor uses Red, Green and Blue (RGB) phosphors (or LCDs), a printer uses Cyan, Magenta, Yellow and Black (CMYK) toner or ink.
- A monitor can display very vivid colors such as intense reds and blues and these cannot be easily produced on any printer using toner or ink. Similarly, there are certain colors, (some yellows for example), that can be printed, but cannot be displayed accurately on a monitor. This disparity between monitors and printers is often the main reason that printed colors do not match the colors displayed on screen.

Viewing Conditions

A document can look very different under various lighting conditions. For example, the colors may look different when viewed standing next to a sunlit window, compared to how they look under standard office fluorescent lighting.

Printer Driver Color Settings

The driver settings for Manual color can change the appearance of a document. There are several options available to help match the printed colors with those displayed on screen. These options are explained in subsequent sections of this User Manual.

Monitor Settings

The brightness and contrast controls on your monitor can change how your document looks on-screen. Additionally, your monitor color temperature influences how "warm" or "cool" the colors look.

NOTE

Several of the Color Matching options make reference to your monitor's Color Temperature. Many modern monitors allow the color temperature to be adjusted using the monitor's control panel.

There are several settings found on a typical monitor:

- **5000k***
  Warmest; yellowish lighting, typically used in graphics arts environments.
- **6500k**
  Cooler; approximates daylight conditions.
- **9300k**
  Cool; the default setting for many monitors and television sets.

*k = degrees Kelvin, a measurement of temperature

How Your Software Application Displays Color

Some graphics applications such as CorelDRAW® or Adobe® Photoshop® may display color differently from "office" applications such as Microsoft® Word. Please see your application's online help or user manual for more information.

Paper Type

The type of paper used can also significantly affect the printed color. For example, a printout on recycled paper can look duller than one on specially formulated glossy paper.

Choosing a Color Matching Method

There is no one way to achieve a good match between the document displayed on your monitor, and its printed equivalent. There are many factors involved in achieving accurate and reproducible color.

However, the following guidelines may help in achieving good color output from your printer. There are several suggested methods, depending on the type of document you are printing.

NOTE

These suggestions are for guidance only. Your results may vary depending on the application from which you are printing. Some applications will override any color matching settings in the printer driver without warning.

RGB or CMYK?

The guidelines for choosing a color matching method makes distinctions between Red, Green, Blue (RGB) and Cyan, Magenta, Yellow, Black (CMYK).

Generally, most documents you print will be in RGB format. This is the most common, and, if you do not know your document's color mode, assume that it is RGB.

Typically CMYK documents are only supported in professional Desktop Publishing and Graphics applications.

Matching Photographic Images

RGB Only

Sharp Color Matching (see page 278) is a generally a good choice. Select a matching method appropriate to your monitor.

Matching Specific Colors (e.g., a Company Logo)

RGB Only

- Sharp Color Matching (see page 278), and the sRGB setting: PCL or PS driver.
- PostScript Color Matching using the Absolute Colorimetric option (see page 280).
- Use the Color Swatch Utility to print out a chart of RGB swatches and enter your desired RGB values in your application's color picker—PS only (see page 277).

RGB or CMYK

- If you are printing from a graphics application such as Adobe Photoshop, use PostScript Color Matching with the Absolute Colorimetric setting (see page 280).

Printing Vivid Colors

RGB Only

- Use Sharp Color Matching (see page 278), with the Monitor 6500k Vivid, sRGB or Digital Camera settings (PCL or PS).

RGB or CMYK

- Use PostScript Color Matching (see page 280) with the Saturation option.

Color Matching: PCL Driver

Color Matching Options

The Color Matching options in the PCL driver can be used to help match your printed colors to the ones displayed on your monitor.

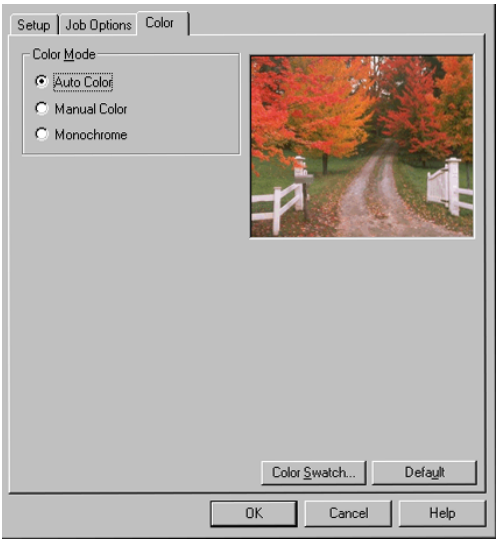
NOTE

The PCL driver's color options are only designed to work with RGB data.

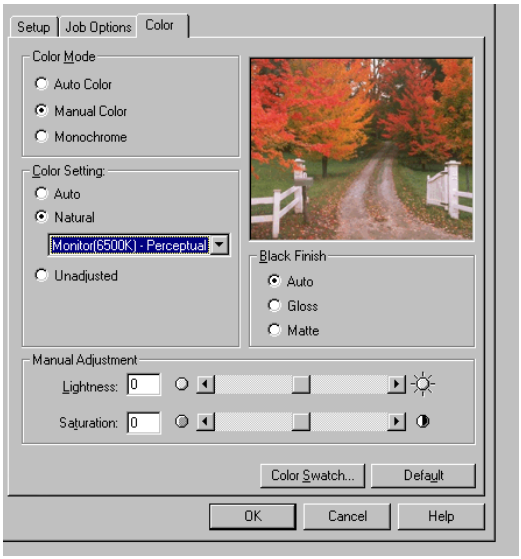
If you are printing CMYK data, we recommend you use the PostScript driver.

To manually set the color matching options in the PCL driver:

1. Click **Start** → **Settings** → **Printers**.
2. Right click the appropriate printer name and click **Document Defaults**.
3. Click the **Color** tab.



a. Click **Manual Color** under **Color Mode**, then click **Natural** under **Color Setting**.



4. Select the method you wish to use:

Monitor (6500K) Perceptual
Optimized for printing photographs when using a monitor with a color temperature of 6500K.

Monitor (6500K) Vivid
Optimized for printing bright colors when using a monitor with a color temperature of 6500K. Ideal for office graphics.

Monitor (9300K)
Optimized for printing photographs when using a monitor with a color temperature of 9300K.

Digital Camera
Optimized for printing photographs taken with a digital camera. This tends to produce prints with lighter and brighter colors. For some photographs, other settings may be better depending on the subjects and the conditions under which they were taken.

sRGB
Optimized for matching specific colors, such as a company logo color. The colors within the printer's color gamut are printed

without any modification, and only colors that fall outside the printable colors are modified.

5. Set any other required parameters using the on-line Help for guidance.
6. When you are done, click **OK** and close the Default dialog box.

The Print Color Swatch Utility

For use with applications which allow you to set your own RGB values for colors.

The Color Swatch utility prints out charts of sample colors. Listed below each color are the corresponding RGB (Red, Green, Blue) values to use in your application to match that printed color.

An example of using the Print Color Swatch function:

You wish to print a logo in a particular shade of red. The steps you would follow are:

1. Click **Start** → **Settings** → **Printers**.
2. Right click the printer name and click **Document Defaults**.
3. Click the **Color** tab.
4. Click the **Color Swatch** button to print the color swatch samples.
5. Select the shade of red that best suits your needs and make a note of the RGB value below that particular shade.
6. Using your program's color picker, enter these same RGB values (from step 5), and change the logo to that color.

NOTE

The RGB color displayed on your monitor may not necessarily match what was printed on the color swatch. If this is the case, it is probably due to the difference between how your monitor and printer reproduce color.

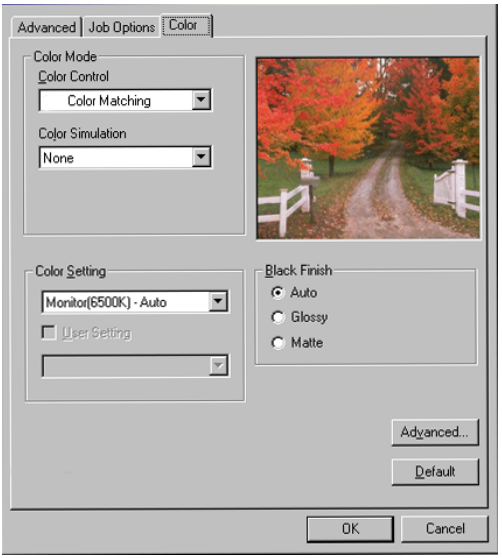
Color Matching: PostScript Driver

Color Matching Options

The PostScript driver offers several different methods of controlling the color output of the printer.

To Manually Set the Color Matching Options in the PostScript Driver:

1. Click **Start** → **Settings** → **Printers**.
2. Right click the printer name and click **Document Defaults**.
3. Click the **Color** tab.

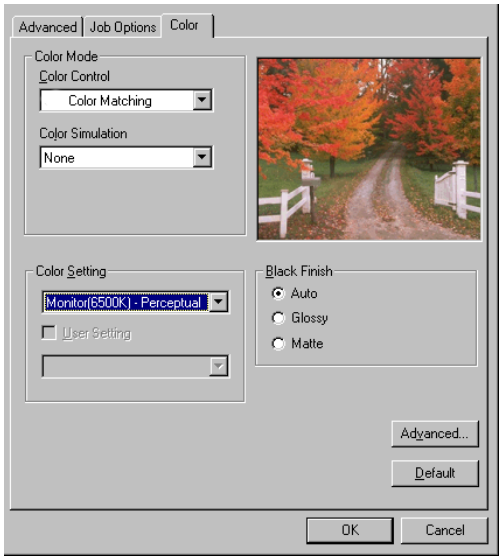


4. Select the method to use from the **Color Control Method** drop-down list under **Color Mode**:

   a. Color Control = Sharp Color Matching

   This is Sharp's proprietary color matching system, and affects *RGB data only*.

Select the type to be used from the drop-down list under **Color Setting** :



- **Monitor (6500K) Perceptual**
  Optimized for printing photographs when using a monitor with a color temperature of 6500K.
- **Monitor (6500K) Vivid**
  Optimized for printing bright colors when using a monitor with a color temperature of 6500K. Ideal for office graphics and text.
- **Monitor (9300K)**
  Optimized for printing photographs when using a monitor with a color temperature of 6500K.
- **Digital Camera**
  Optimized for printing photographs taken with a digital camera. This tends to produce prints with lighter and brighter colors. For some photographs, other settings may be better depending on the subjects and the conditions under which they were taken.

- **sRGB**

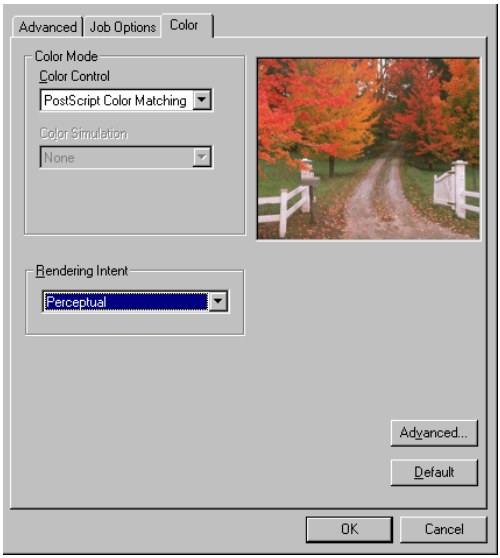
  Optimized for matching specific colors, such as a company logo color.

  The colors within the printer's color gamut are printed without any modification, and only colors that fall outside the printable colors are modified.

b. Color Control = PostScript Color Matching

This uses PostScript Color Rendering Dictionaries built into the printer, and affects both RGB and CMYK data.

Select the rendering type from the **Rendering Intent** drop-down list.



- **Rendering Intents**

  When a document is printed, a conversion takes place from the document's color space to the printer color space. The rendering intents are essentially a set of rules that determine how this color conversion takes place.

  The rendering intents that the printer driver provides are listed below:

– *Auto*

Best choice for printing general documents.

– *Perceptual*

Best choice for printing photographs. Compresses the source gamut into the printer's gamut while maintaining the overall appearance of an image.

– *Saturation*

Best choice for printing bright and saturated colors if you don't necessarily care how accurate the colors are. This makes it the recommended choice for graphs, charts, diagrams etc. Maps fully saturated colors in the source gamut to fully saturated colors in the printer's gamut.

– *Relative Colorimetric*

Good for proofing CMYK color images on a desktop printer. Much like Absolute Colorimetric, except that it scales the source white to the (usually) paper white; i.e. unlike Absolute Colorimetric, this attempts to take the paper white into account.

– *Absolute Colorimetric*

Best for printing solid colors and tints, such as Company logos etc. Matches colors common to both devices exactly, and clips the out of gamut colors to their nearest printed equivalent. Tries to print white as it appears on screen. The white of a monitor is often very different from paper white, so this may result in color casts, especially in the lighter areas of an image.

c. Color Control = No Color Matching

Use this option to switch off all printer color matching.

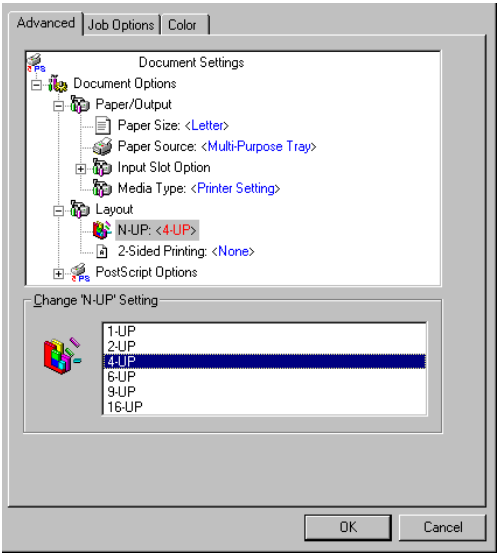
d. Color Control = Print in Grayscale

This option prints all documents as monochrome.

Printing Multiple Pages on One Sheet (N-up Printing)

N-Up Printing Using the PostScript Driver

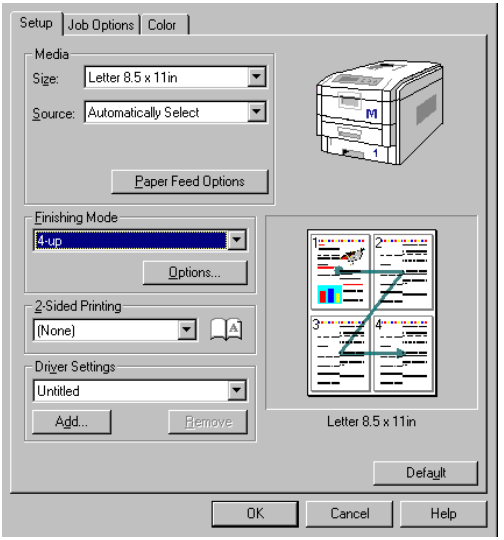
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the PS driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Advanced** tab, under **Document Options** → **Layout**, click **N-UP**, then select the number of pages per sheet in the **Change 'N-UP' Setting** list.



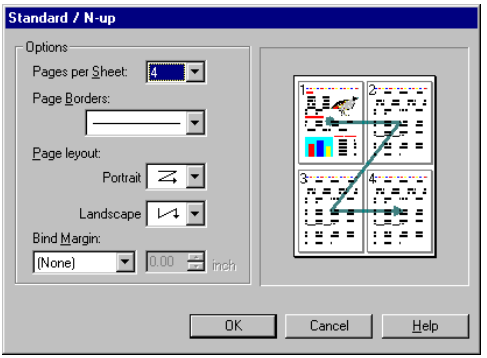
4. Click **OK** and print the document.

N-Up Printing Using the PCL Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the PCL driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Setup** tab, under **Finishing Mode**, select the number of pages per sheet.



4. Click the **Options** button and select the **Page Borders**, **Page Layout** and **Bind Margin**, then click **OK**.



5. Click **OK** and print the document.

Printing Custom Page Sizes

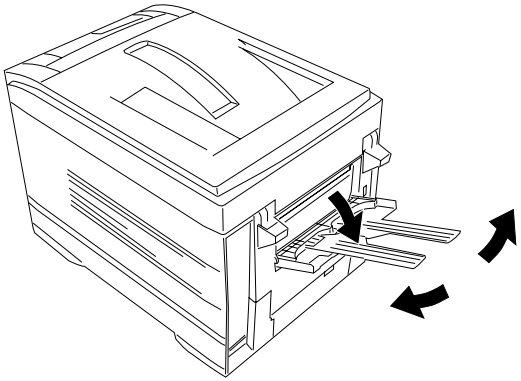
Custom page sizes can only be printed from the Multi-purpose tray. The printer media size for the Multi-purpose tray must be manually set in the driver to the custom paper size before use (range 3½ to 8½ inches [89 to 216 mm] wide x 5 to 14 inches [127 to 356 mm] long).

Printing Custom Pages Using the PostScript Driver

NOTE

One custom paper size can be defined in the PostScript driver.

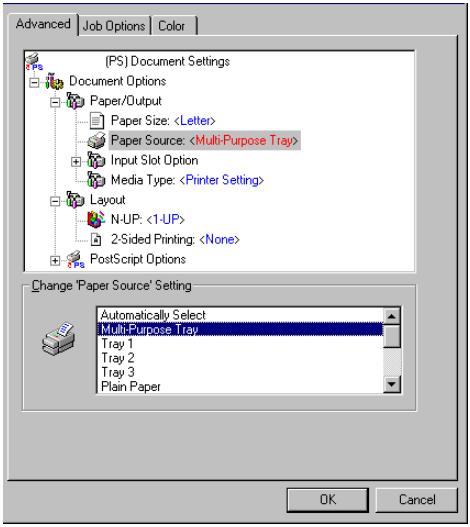
1. Make sure the rear exit is open.



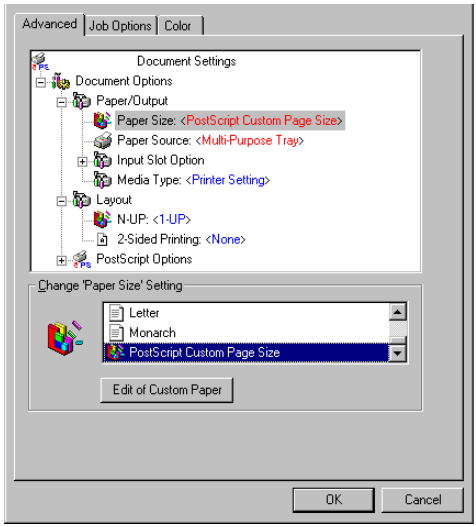
2. Open the file in your application and select **File** → **Print**.
3. In the Print dialog box, select the PS driver, then click **Properties** (or **Setup**, or your application's equivalent).

4. On the **Advanced** tab, under **Document Options** → **Paper/Output**:

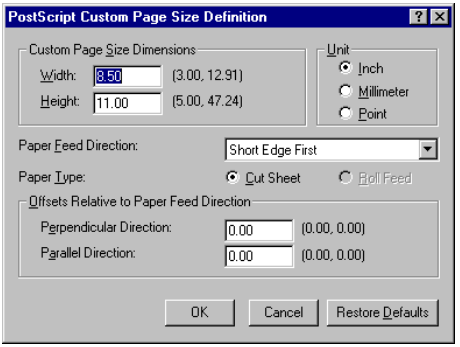
   a. Click **Paper Source** and select **Multi-Purpose Tray** in the **Change 'Paper Source' Setting** list.



   b. Click **Paper Size** and select **Postscript Custom Page Size** in the **Change 'Paper Size' Setting** list.



5. Click the **Edit of Custom Paper** button.



6. Enter the **Width** and **Height** for the custom paper and select the **Paper Feed Direction**.

NOTE

- **Long Edge First = media feeds in long edge first**
- **Short Edge First = media feeds in short edge first**
- **Long Edge First (flipped) = Reserved for future use.**
- **Short Edge First (flipped) = Reserved for future use.**

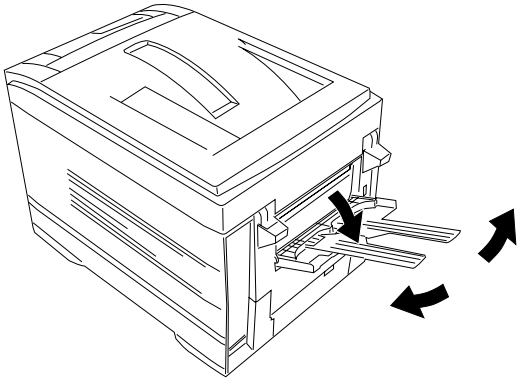
7. Click **OK** twice, then print the document.

Printing Custom Pages Using the PCL Driver

NOTE

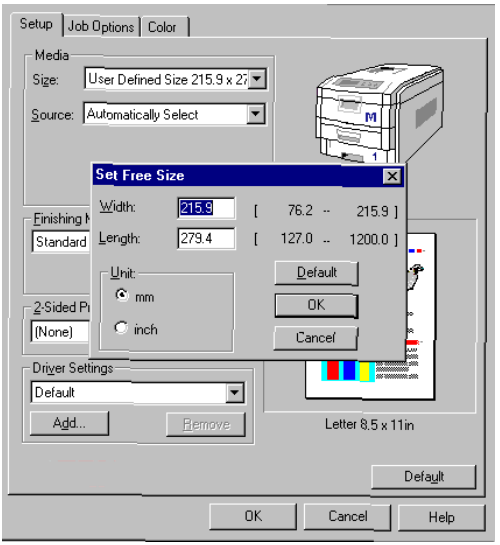
Up to 32 custom page sizes can be defined in the PCL driver.

1. Make sure the rear exit is open.



2. Open the file in your application and select **File** → **Print**.
3. In the Print dialog box, select the PCL driver, then click **Properties** (or **Setup**, or your application's equivalent).

4. On the **Setup** tab, under **Media**, select **User Defined Size** in the **Size** list.
   The Set Free Size dialog box appears.



NOTE

You may see a Warning dialog box indicating a conflict. If you do, click OK and the driver will automatically make the needed changes to correct for the conflict.

5. Select the **Unit**, then enter the **Width** and **Length** measurements to use, then click **OK**.

6. **User Defined Size** appears in the **Size** list on the **Setup** tab.

NOTE

To save the setting for future use:

- **Click Paper Feed Options, then click Custom Size.**
- **Select the unit, then enter the relevant information for Width and Height and give your custom size a name under Name.**
- **Click Add.**
- **Click OK twice.**
  The Custom Page Size is added to the bottom of the Paper Size list.

7. Click **OK** and print the document.

Changing the Resolution for A Print Job

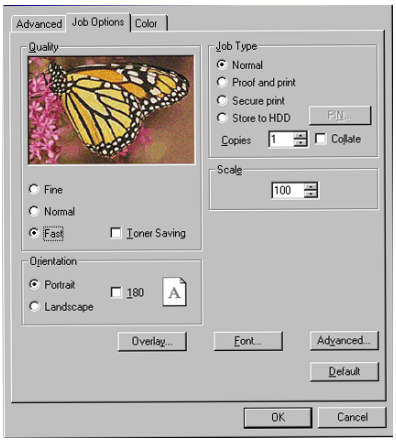
NOTE

These instructions explain how to change the settings as you are printing a job. If you wish to change the settings to apply to all jobs (default settings):

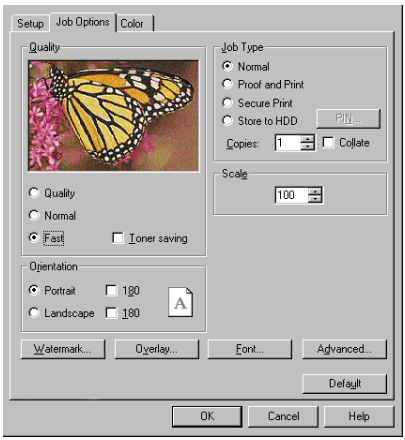
- **Click Start → Settings → Printers.**
- **Right click the appropriate printer name. then select Properties.**
- **Follow steps 3, etc., below: note that the Properties screen for setting defaults will have more tabs.**

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the appropriate driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. Click the **Job Options** tab.
4. Select the required printing resolution under **Quality**.

PostScript Driver



PCL Driver



5. Select **Toner Saving** if appropriate.
6. Click **OK** and print the document.

Duplex Printing
(Printing on Both Sides of the Paper)

NOTE

The optional duplex unit must be installed in the printer and enabled before duplex printing can be carried out.

- Standard paper sizes only.
- Paper weight range 20 to 28 lb. US Bond (75 to 105 g/m^2).
- Paper must be loaded print side *up*.
- Only Tray 1, optional Trays 2 and 3, and the High Capacity Feeder trays can be used for duplex printing. The Multi-purpose tray *cannot* be used for duplex printing.

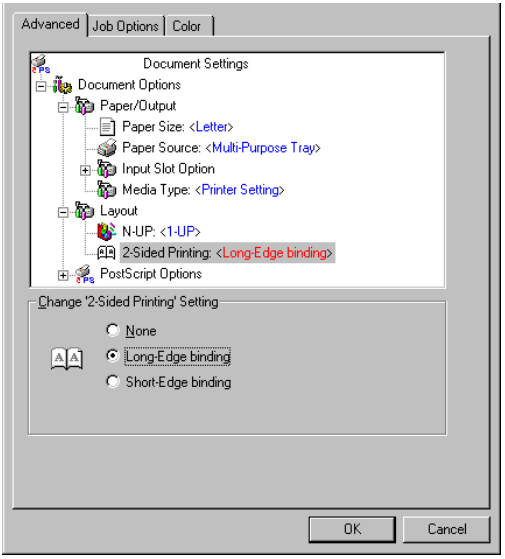
NOTE

These instructions explain how to change the settings as you are printing a job. If you wish to change the settings to apply to all jobs:

- **Click Start → Settings → Printers.**
- **Right click the appropriate printer name. then select Properties.**
- **Follow steps 3, etc., below: note that the Properties screen for setting defaults will have more tabs.**

Duplex Printing Using the PostScript Driver

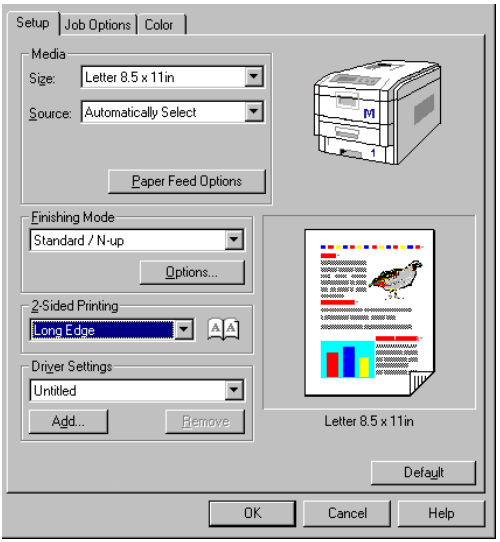
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the PS driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Advanced** tab, under **Document Options** → **Layout,** click **2-Sided Printing** and select **Long Edge binding** or **Short Edge binding** in the **Change '2-Sided Printing' Setting** list.



4. Click **OK** and print the document.

Duplex Printing Using the PCL Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the PCL driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Setup** tab, under **2-Sided Printing**, select **Long Edge** or **Short Edge**.



4. Click **OK** and print the document.

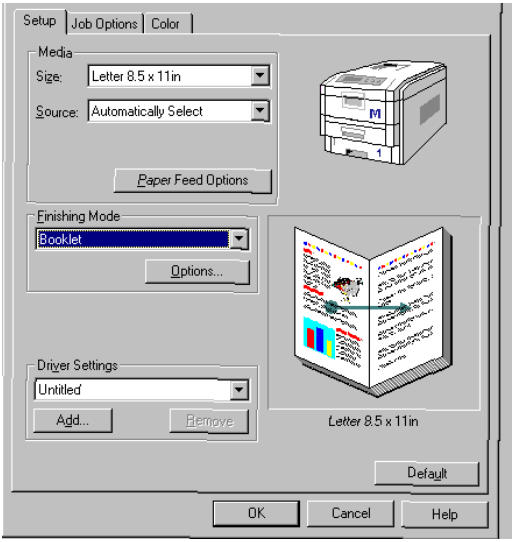
Printing Booklets: PCL Driver Only

NOTES

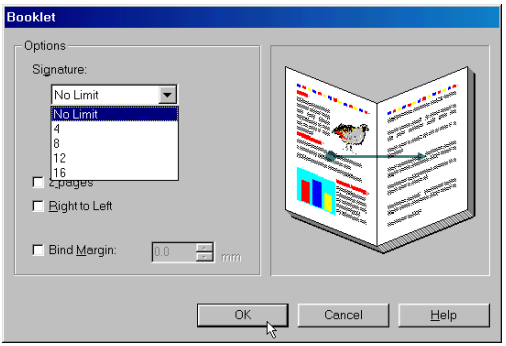
- **You must have the duplex unit installed and enabled in order to print booklets.**
- **Not available on some network connections: see the Help file.**
- **Some software applications may not support booklet printing.**
- **The right-to-left setting allows a booklet to be printed for right to left reading, which is used in some languages.**

Printing Booklets Using the PCL Driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the PS driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Setup** tab, under **Finishing Mode**, select **Booklet** in the list.



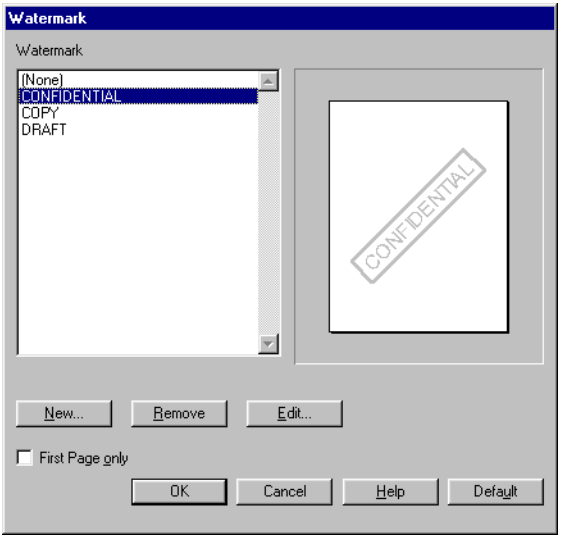
4. Click the **Options** button and set **Signature**, **2Pages**, **Right to Left** and **Bind Margin** as required, then click **OK**.



5. Click **OK** and print the document.

Printing Watermarks: PCL Driver Only

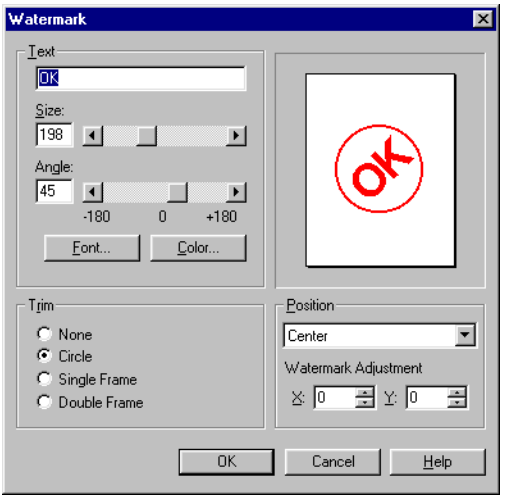
1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the PCL driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Job Options** tab, click the **Watermark** button.
4. Select a name from the **Watermark** list.



NOTE

To create a new watermark or edit an existing watermark:

- **Click the New or Edit button.**



- **Enter the text for the watermark and select the font, size, angle, etc., to be used.**
- **Click OK.**
  The new watermark appears in the Watermark list.

5. If you wish to print the watermark only on the first page of the document, select **First Page only**.
6. Click **OK** twice and print the document.

Collating

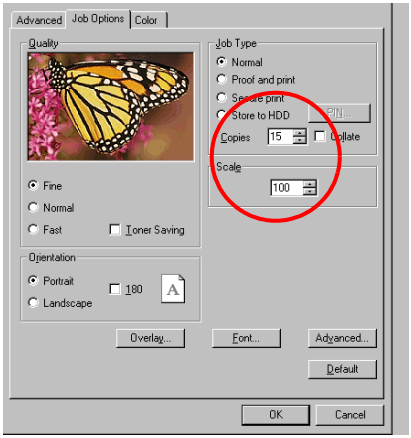
Collating can be carried out with or without a hard disk drive installed. However, printers with a hard disk drive will provide greater performance.

Important

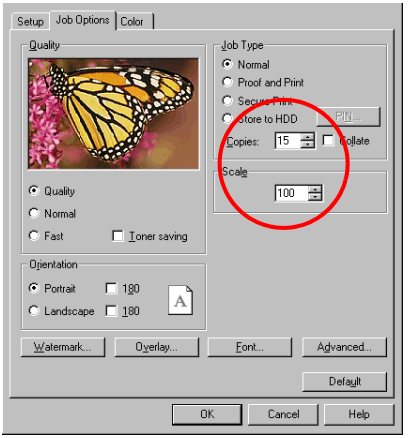
If your software application has a collate option, use it instead of the collate option in the printer driver.

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the appropriate driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Job Options** tab, under **Job Type**, enter the number of copies required and—*only if the application has no collate option*—select **Collate**.

PostScript Driver



PCL Driver



4. Click **OK** and print the document.

Proof and Print

Proof and Print allows printing of a single copy of a document for checking before printing multiple copies of the same document.

NOTES

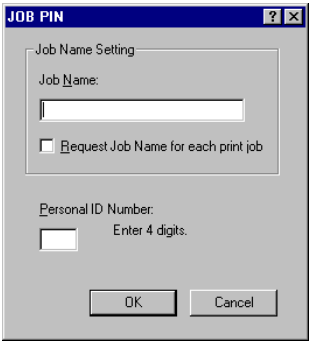
- **The internal hard disk must be installed in the printer and enabled, to allow for spooling of the print job before final printing.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy is printed.**
- **If the software application being used has a collate print option, it must be turned OFF for proof and print to operate correctly.**
- **Proof and Print may not be available in some software applications.**

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the appropriate driver.
3. Select **Print to file**.
4. Click **Properties** (or **Setup**, or your application's equivalent).

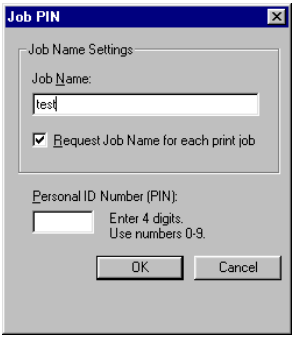
5. On the **Job Options** tab, under **Job Type**, select **Proof and Print**.

   a. Enter a job name of up to 16 characters under **Job Name Setting** and, if required, select **Request Job Name for each print job**.

PostScript Driver



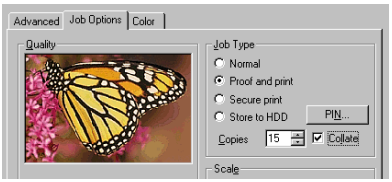
PCL Driver



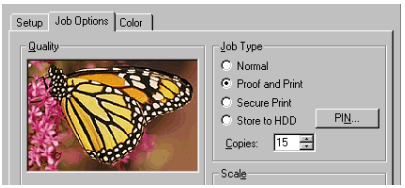
   b. Type in a four digit personal ID number from 0000 to 7777, then click **OK**.

6. Enter the number of copies and, if required, select **Collate** (PostScript driver only).

PostScript Driver



PCL Driver



7. Click **OK** and print the document. A print file of the document is created and stored on the hard disk drive, and one copy is printed for checking.

8. After checking the proof, print or delete (if incorrect) the remaining copies of the document using the procedures given below.

Printing Copies

1. Press the MENU button to access the **PRINT JOBS MENU**, then press the SELECT button.
2. Enter your personal ID number using the buttons on the printer control panel.
3. Press the VALUE button until **ALL JOBS** or the required job name is displayed.
4. Press the SELECT button to print the remaining copies of the document.

Deleting Copies

If the proof is not ready for printing, the job must be deleted from the printer:

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter your personal ID number using the buttons on the printer control panel.
3. Press the VALUE button until **ALL JOBS** or the required job name is displayed.
4. Press the CANCEL button to delete the remaining copies of the document.
5. When the deletion confirmation message appears, confirm by pressing the SELECT button.

Secure Printing (Printing Confidential Documents)

Secure printing or printing with passwords allows the printing of confidential documents on printers that are shared with other users.

NOTE

- **The internal hard disk must be installed in the printer and enabled to allow for spooling of the print job before final printing.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy printed.**
- **If the software application being used has a collate print option, this must be turned OFF for secure printing to operate correctly.**
- **Secure printing may not be available in some software applications.**

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the appropriate driver.
3. Select **Print to file**.
4. Click **Properties** (or **Setup**, or your application's equivalent).
5. On the **Job Options** tab, under **Job Type**, select **Secure Print**.

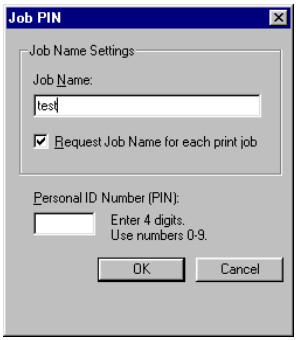
NOTE

If you have already stored a Secure Print document on the hard disk drive and have not yet printed it, click the PIN button and enter a new name for the current document.

a. Enter a job name of up to 16 characters under **Job Name** , and, if required, select **Request Job Name for each print job**.

PostScript Driver

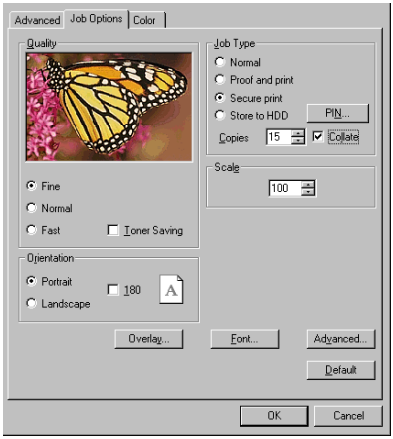
PCL Driver



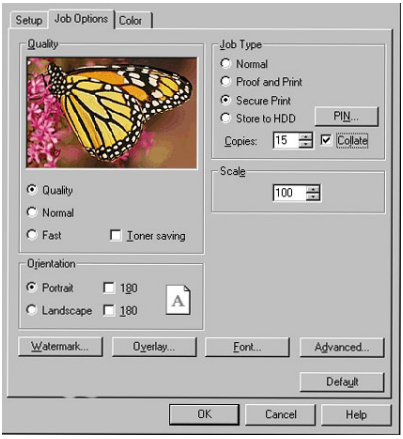
b. Type in a four digit personal ID number from 0000 to 7777, then click **OK**.

6. Enter the number of copies and, if required, select **Collate**.

PostScript Driver



PCL Driver



7. Click **OK** and print the document. A print file of the document is created and stored on the hard disk drive.

8. Go to the printer and print out the document using the front panel (see below).

Printing a Confidential Document from the Front Panel

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you set above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the SELECT button.
   The document will print and be deleted from the hard disk drive.

Deleting the Confidential Document Before Printing It

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you set above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the CANCEL button to delete the job from the printer.

Store to Hard Disk

Store to Hard Disk (job spooling) allows print jobs to be prepared and stored on the hard disk for printing on demand. This is good for forms, generic memos, letterhead stationery, etc.

NOTE

- **The internal hard disk must be installed in the printer and enabled.**
- **If the hard disk memory is insufficient for the spooled data, DISK FULL is displayed and only one copy printed.**
- **If the software application being used has a collate print option, this must be turned OFF for Store to Hard Disk to operate correctly.**
- **Store to Hard Disk may not be available in some software applications.**

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the appropriate driver.
3. Select **Print to file**.
4. Click **Properties** (or **Setup**, or your application's equivalent).
5. Enter the number of copies and, if required, select **Collate**, then select **Store to HDD**.

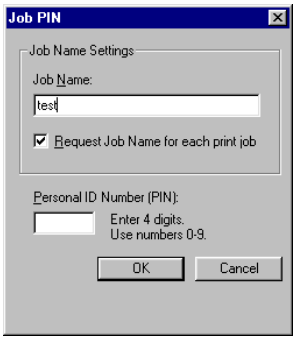
NOTE

If you've already stored a document on the hard disk drive and want to store another one, click the PIN button and enter a new Job Name.

a. Enter a job name of up to 16 characters under **Job Name Setting** and, if required, select **Request Job Name for each print job**.

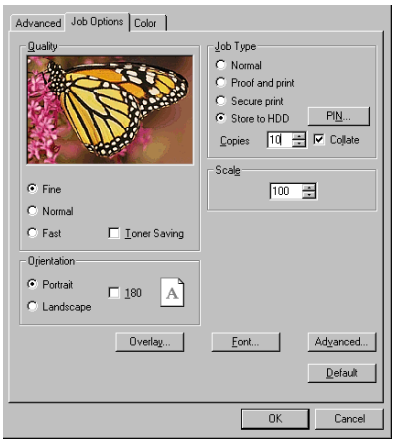
PostScript Driver

PCL Driver

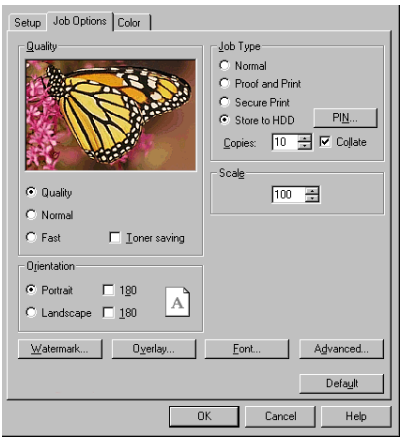


b. Type a four digit personal ID number from 0000 to 7777, then click **OK**.

PostScript Driver



PCL Driver



6. Click **OK** and print the document. A print file of the document is created and stored on the hard disk drive and can then be printed on demand, or deleted, using the procedures given below.

To Print the Stored Document

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you selected above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the SELECT button to print the document.

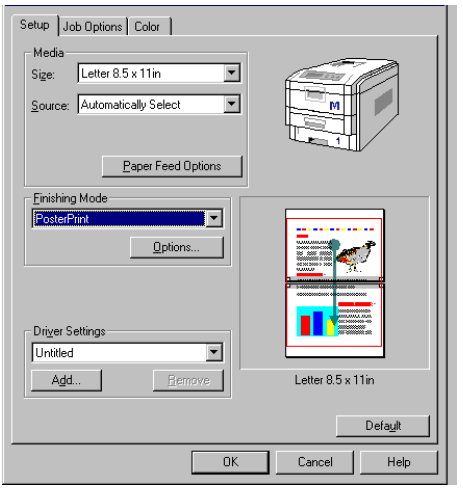
To Delete a Stored Document from the Hard Disk Drive

1. Press the MENU button to access the PRINT JOBS MENU and press the SELECT button.
2. Enter the personal ID number you selected above using the buttons on the printer control panel.
3. Press the VALUE button until ALL JOBS or the required job name is displayed.
4. Press the CANCEL button to delete the remaining copies of the document.
5. When the deletion confirmation message appears, confirm by pressing the SELECT button.

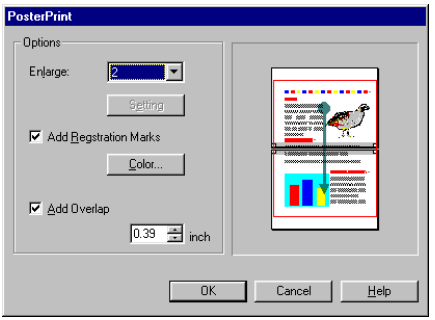
Printing Posters: PCL Driver Only

This option allows you to configure and print posters by breaking up the document page into multiple pieces which print enlarged on separate sheets. Then the separate sheets are combined to produce a poster. It is only available with the PCL printer driver

1. Open the file in your application and select **File** → **Print**.
2. In the Print dialog box, select the PCL driver, then click **Properties** (or **Setup**, or your application's equivalent).
3. On the **Setup** tab, under **Finishing Mode**, select **Poster Print**.



4. Click the **Options...** button and enter the configuration details



5. Click **OK** twice and print the document.

Troubleshooting

LCD Messages

The liquid crystal display (LCD) on the control panel indicates the printer status and if there is a problem with the printer. Status and error messages are listed below together with an explanation of what each message means:

Summary of LCD Messages

LCD Message	Meaning
***** DRUM NEAR LIFE	An image drum is nearing the end of its life. (***** indicates color)
***** EMPTY	Warning that Tray ***** is empty. MP Tray is Tray 0.
***** NEAR END	The paper in the selected ***** is nearly finished. (***** indicates paper tray).
***** TONER LOW	Toner is low (***** indicates color).
***** TONER SENSOR ERROR	Error with the toner sensor (***** indicates color). Call for service.
BELT UNIT MISSING	Transfer belt unit is missing.
CANCELLING JOB	Cancelling the current job.
CENTRO I/F ERROR	Centronics interface error (parallel interface).
CHANGE ***** IMAGE DRUM	Change the image drum (***** indicates color).
CHANGE BELT UNIT	Change the transfer belt.
CHANGE FUSER UNIT	Change the fuser unit.
CHANGE PAPER TO *****	Paper must be changed to correct paper size and/or media type (***** indicates size or media type).
CHECK *****	Check Tray ***** for paper jam. MP tray is Tray 0.
CHECK BELT UNIT	Check the transfer belt for paper jam, correct installation, etc.
CHECK DUPLEX	Check the duplex unit for paper jam, correct installation, etc.
CHECK FUSER UNIT	Check the fuser unit for paper jam, correct installation, etc.

Summary of LCD Messages (continued)

LCD Message	Meaning
CHECK IMAGE DRUM	Check the image drum for correct installation, etc. Color will be indicated.
COLLATE FAIL	Collating of multiple copies has failed.
COLOR ADJUSTING	Adjusting head so that colors do not shift on to each other.
COLOR BALANCE ADJUST	Adjust the color balance.
COMMUNICATION ERROR	There is an error with communications to computer.
DATA ARRIVE	Data has been received but processing has not started yet.
DATA PRESENT	Un-printed data remains in buffer. Waiting for data to follow.
DISK FILE OPERATION FAILED	Error with hard disk operations.
DISK FILESYSTEM IS FULL	Hard disk/flash memory full.
DISK FULL	The internal hard drive is full.
EEPROM INITIALIZE ERROR	Call for service.
EMPTY	Indicates which paper tray is empty.
ERROR POSTSCRIPT	A PostScript error has occurred.
FATAL ERROR	Call for service.
FUSER UNIT MISSING	Fuser unit is missing.
INSTALL ADDITIONAL MEMORY	Additional memory is required before job can be printed.
INSTALL NEW IMAGE DRUM	Install a new image drum. Color will be indicated.
INSTALL NEW TONER	Install a new toner cartridge. Color will be indicated.
INSTALL PAPER CASSETTE	Install the paper cassette. Paper tray will be indicated.
INVALID DATA	Data is incorrect.

Summary of LCD Messages (continued)

LCD Message	Meaning
LOAD	Load correct paper size/type. Size/type will be indicated.
MEDIA MISMATCH	Paper type set via menu does not match that sent via driver.
NETWORK ERROR	Network error.
OFFLINE	Shows off line status.
ONLINE	Shows on line status.
OPEN UPPER COVER	Open the upper cover.
PAPER JAM	Indicates there is a paper jam.
PAPER SIZE ERROR	Indicates wrong paper size.
PLEASE POWER OFF	Printer must be switched off after disk/flash initialization.
POWER SAVE	The printer is in power save mode.
PRINTING	Data is being printed.
PROCESSING	Data is being processed.
RAM CHECK	RAM is being checked after switching printer on.
REGISTRATION ADJUST TEST	Registration adjustment being tested.
REGISTRATION ERROR	An error has occurred setting up the registration.
REMOVE THE PAPER	Indicates wrong paper being used.
SERVICE CALL	A serious error has occurred. Call for service.
SHUTDOWN	Starts the shutdown procedure to protect the file system on hard disk.

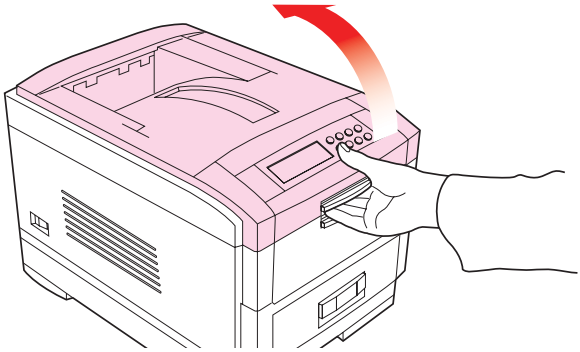
Summary of LCD Messages (continued)

LCD Message	Meaning
SIZE MISMATCH	Change paper to correct size/type. Press On-line to continue.
STACKER FULL	Stacker is full. Remove the paper.
UNSUITABLE SIZE	Indicates wrong paper size.
USB I/F ERROR	USB interface error has occurred.
WARMING UP	The printer is warming up.

Paper Jams

Paper jams are indicated by an error message on the display. Paper jams are cleared as follows:

1. Open the top cover of the printer.

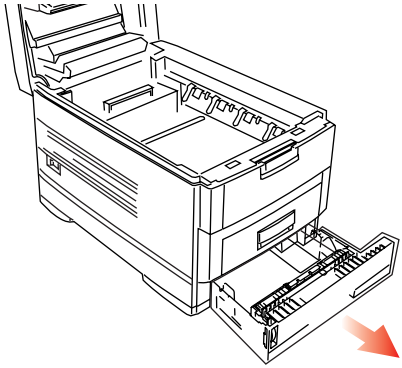


NOTE

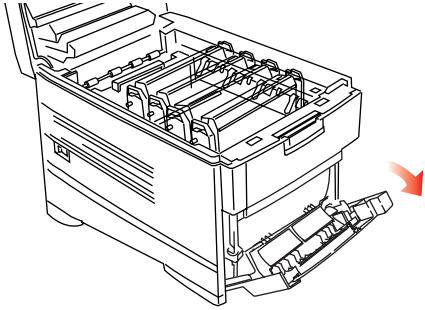
Do not close the top cover *completely* (until it latches) during this process. If the top cover is closed too soon, the paper jam error will not be cleared.

To minimize possible damage to the drums due to exposure to light, lower the top cover when appropriate, but do not press down to latch it.

2. **Check the paper tray**: Pull out the paper tray and remove any jammed paper from the printer, then gently push the paper tray back in.

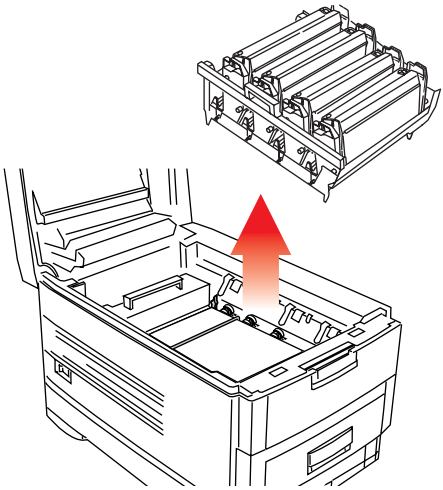


3. **Check behind the front cover.** Open the front cover and remove any jammed paper, then close the front cover.



4. **Check the transfer belt.**

   a. Remove all four image drums as one unit in their cradle and place the cradle on a *flat* surface to prevent damage to the shiny green surface on the bottom of the drums.



CAUTION!

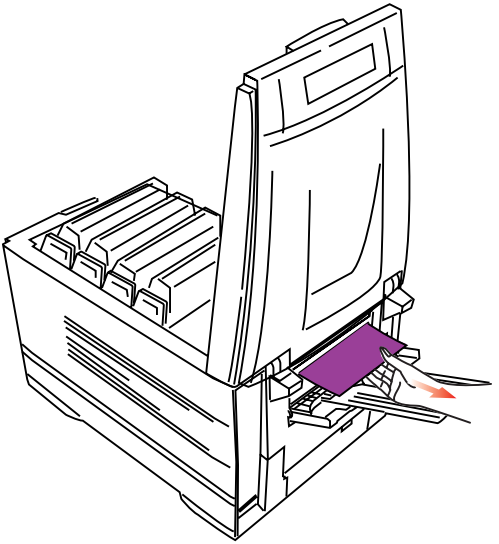
To avoid damage to the drums:

- **Be careful to place the drums on a flat surface so that nothing contacts the shiny green surface in the bottom of the drum.**
- **Keep the image drums away from light.**

   b. Carefully remove any jammed paper from the transfer belt and top paper exit.

   c. Place all four image drums as one unit in the printer.

5. Check behind the rear cover: open the rear cover and remove any jammed paper, then close the rear cover.

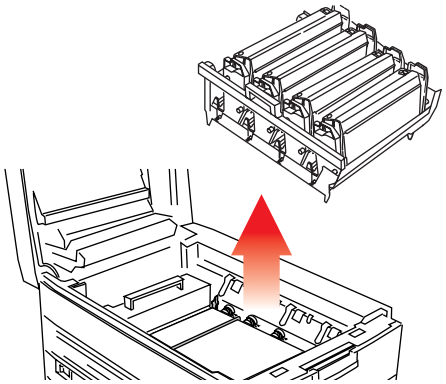


6. **Check the fuser unit:**

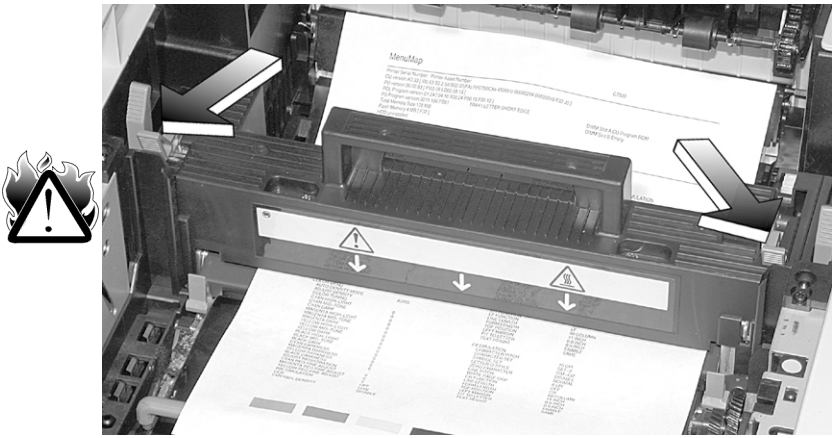
WARNING!

The fuser unit is very hot after printing. Always use the handle when lifting it.

a. If necessary, lift out the toner/drum cradle to access the jammed page.



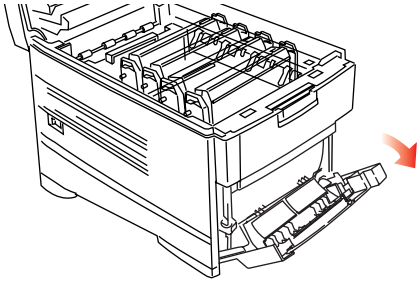
b. Release the fuser roller lock levers at either end of the fuser and slowly remove the jammed paper.

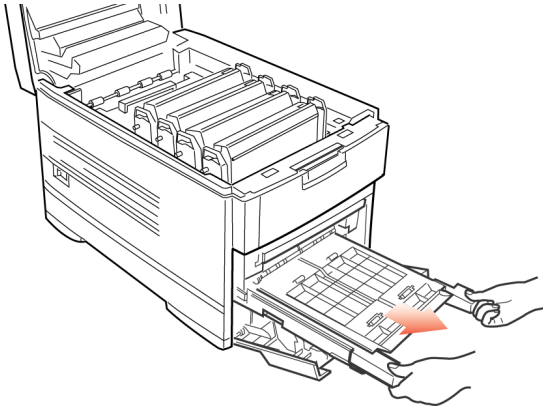


c. Re-lock the levers at either end of the fuser.

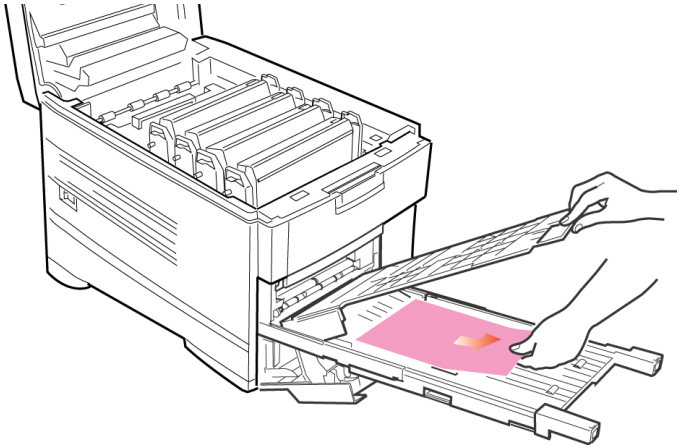
7. Check the duplex unit (if installed).

a. Open the front cover, then slide out the duplex unit.





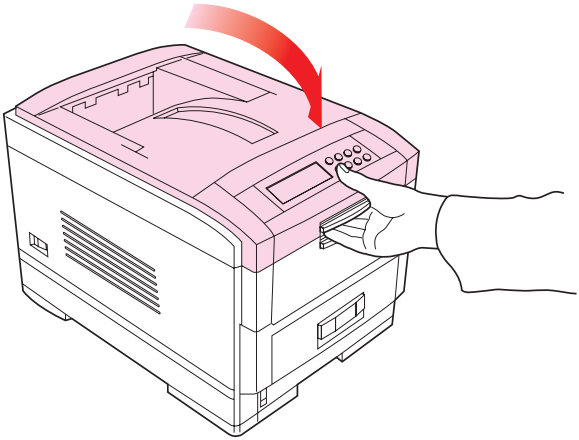
b. Open the duplex top cover and remove any jammed paper.



c. Close the duplex top cover and slide the duplex unit back into the printer.

d. Close the front cover.

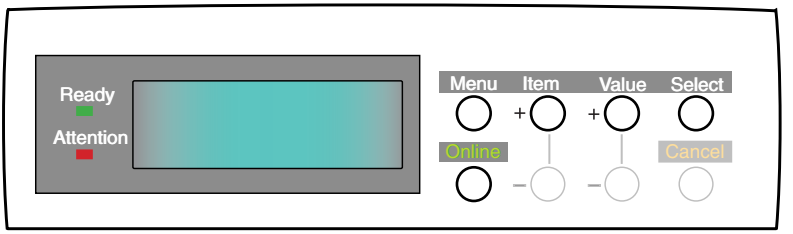
8. **Check any additional paper trays**: if any optional paper tray(s) are installed, pull them out and check that no paper is jammed along the various parts of the exit path.
9. Close the top cover.



Parallel Transmission Mode

The parallel port supports IEEE-1284 and ECP mode. If your computer's parallel port is not compatible with one of these modes, the printer may not print at all or it may print corrupted data.

To correct for this, enter the printer's Parallel Menu and change the ECP setting to Disable.



1. Press the MENU button until **PARALLEL MENU** is displayed, then press the SELECT button.
2. Press the ITEM button until **ECP** is displayed.
3. Press the VALUE button to change the display to **DISABLE**.
4. Press the SELECT button.
   An asterisk (*) appears to the right of the selected setting.
5. Press the ONLINE button to return the printer to online status

Problem Solving

Paper Feed Problems

If paper jams are frequent:

- More than one sheet feeds at a time.
- Paper curls.
- Paper feeds at an angle.

Possible Cause	Remedy
The printer is not horizontal.	Place the printer on a stable, level surface.
The paper is too thin.	Use the correct type of paper (see Specifications).
The paper is moist or affected by static.	Store paper within specified temperature and humidity levels.
The paper is creased or wrinkled.	Remove the creased/wrinkled paper from the feed tray.
The paper is not aligned correctly.	Adjust tray or manual feed guides.
Paper doesn't feed.	Correct paper feed selection in the printer driver.

Paper jam has been cleared, but printer does not print.

Possible Cause	Remedy
The top cover has not remained open until all paper jams have been cleared.	Removing a paper jam is not sufficient: Raise and *gently* lower the top cover, especially if the paper jam has been removed from behind the front cover.

Problems Printing

Cannot configure for parallel connection.

Possible Cause	Remedy
The computer does not support bi-directional parallel interface.	There is no fix for this problem. You should only use a computer that does support a bi-directional parallel interface.

Possible Cause	Remedy
Parallel cable does not meet specifications.	Use a bi-directional parallel cable to IEEE 1284–1994 standard.
The interface is disabled.	Check that the parallel interface is set to enable.
Configuration procedure was not correctly followed or cancelled.	Configure again from the beginning.
Parallel cable is disconnected or faulty.	Reconnect or try another cable.
A converter, buffer or extension cable is being used.	Test by connecting printer and computer directly.

Cannot configure for USB connection.

NOTE

- **Windows 95 does not support USB.**
- **Windows 98 upgraded from Windows 95 may not support USB.**
- **Windows 98 original installation and Windows Me, 2000 and XP all support USB.**

Possible Cause	Remedy
Computer does not support USB interface.	Check if there is a USB controller in the Windows device manager.
USB cable does not meet specifications.	Use USB cable to specification Ver.1.1.
Interface is disabled.	Check that USB interface is set to Enable.
Configuration procedure was not correctly followed or cancelled.	Configure again from the beginning.
USB cable is disconnected or faulty.	Reconnect or try another cable.
A USB hub is being used.	The printer cannot be used with a USB hub. Connect the printer and computer directly.

Printout is garbled or incorrect with parallel connection.

Possible Cause	Remedy
Possible mismatch on parallel connection between computer and printer.	Change parallel transmission mode (see Parallel Transmission Mode above).

Cannot print.

- **LPT WRITE ERROR** is displayed.
- **PRNUSBX WRITE ERROR** is displayed.

Possible Cause	Remedy
Interface is disabled.	In the printer menu settings, enable Parallel or USB interface.
Printer is switched OFF.	Switch ON.
Printer interface cable is disconnected.	Reconnect the printer interface cable.
A converter, buffer, extension cable or USB hub is being used.	Test by connecting the printer and computer directly.
Printer driver output port is incorrect.	Set correct output port to which the printer interface cable is connected.
Printer is not selected in the printer driver.	Select the printer or set to default printer.
Incorrect printer driver is being used.	Delete this printer driver and install correct printer driver.

Application error or general protection fault is displayed.

Possible Cause	Remedy
Application is not suitable for Windows version.	Upgrade the application.
Memory is insufficient for number of applications running.	Close all other applications.
Print file is corrupted.	Correct or recreate the file.
Memory is insufficient for application.	Try freeing up memory by deleting all files from the Temp directory and emptying the Recycle BIn. If this doesn't work, increase the comptuer's memory.
Insufficient free space on hard disk.	Delete unnecessary files.
Printer driver is incorrectly configured.	Correctly configure printer driver.

Printing is slow.

Possible Cause	Remedy
Print processing is carried out by the computer.	Use a computer with a faster processor.
Print resolution is set high.	Set lower print resolution in the printer driver.
Data is too complex.	Simplify data.

Printer requests paper size change to continue printing.

Possible Cause	Remedy
Paper loaded in tray is different size from that formatted in software application.	Either change paper in tray to match size formatted in application and press ONLINE to continue, or continue printing on existing paper by pressing ONLINE.

Problems with Poor Quality Printing

Longitudinal white stripes

Possible Cause	Remedy
LED head is dirty.	Clean LED head with lens cleaner or soft tissue.
Toner is low.	Change toner cartridge.
Image drum damaged.	Change image drum.

Longitudinal fading

Possible Cause	Remedy
LED head is dirty.	Clean LED head with lens cleaner or soft tissue.
Toner is low.	Change toner cartridge.
Paper is unsuitable for printer.	Use recommended paper.

Faint Printing

Possible Cause	Remedy
The toner cartridge is incorrectly installed.	Reinstall the toner cartridge.
Toner is low.	Change toner cartridge.
The paper is moist.	Store paper within specified temperature and humidity levels.
Paper is unsuitable for printer.	Use recommended paper.

Fading in Patches

Possible Cause	Remedy
The paper is moist.	Store paper within specified temperature and humidity levels.

Longitudinal Black Stripes

Possible Cause	Remedy
Image drum is damaged.	Replace image drum.
Toner is low.	Change toner cartridge.
Periodic black lateral lines or spots.	• If the lines or spots occur at intervals of approximately 44 - 94 mm, the image drum (green tube) is damaged or dirty. If damaged, replace the image drum cartridge. If dirty, wipe the image drum gently with soft tissue. If this does not work, replace the image drum. • If the lines or spots occur at intervals of approximately 113 mm, the fuser roller is damaged. Change the fuser unit.
The image drum has been exposed to light.	Remove the image drum from the printer and store it in a dark place for several hours. If this does not work, replace the image drum.

Faint Shading on Unprinted Sections

Possible Cause	Remedy
Paper has been affected by static electricity.	Store paper within specified temperature and humidity levels.
Paper is too thick.	Use recommended paper.
Toner is low.	Change toner cartridge.

Blurred Letter Edges

Possible Cause	Remedy
LED is dirty.	Clean LED with lens cleaner or soft tissue.
Cannot print desired color because toner is low.	Replace toner cartridge.
Black formation method does not match application.	Open the printer driver and set black formation to CMYK.

Miscellaneous Problems

The power is on, but the printer does not go online.

Possible Cause	Remedy
Bad connection	Switch off the printer and disconnect the power cable. Reconnect power cable and switch printer on. If this does not clear the fault, call for service.

Print processing does not start.

Possible Cause	Remedy
Printer error	Check the control panel. If an error message is displayed, correct the problem.

Print processing cancels.

Possible Cause	Remedy
The printer interface cable is faulty.	Replace the printer interface cable.
The time out setting is too short.	Reset time out to a higher value.

Printer makes a strange noise.

Possible Cause	Remedy
The printer is not horizontal.	Place the printer on a stable, level surface.
There are scraps of paper or other foreign matter inside the printer.	Check the inside of the printer and remove any such objects.
The top cover is not firmly shut.	Press the left and right sides of the top cover.

An asterisk (*) symbol appears on the display, repeatedly moving across the first line then the second.

Possible Cause	Remedy
The main board is not properly seated in the printer.	Turn the printer off, then reseat the main board and turn the printer back on again.

The printer takes a long time to start printing.

Possible Cause	Remedy
The printer has to warm up returning from power save mode.	In the printer menu settings, set power save to a higher value to increase the length of time before entering power save mode.
The image drum carries out a cleaning process to ensure print quality, which takes time.	Wait until this process has been completed.
The fuser unit adjusts temperature, which takes time.	Wait until this process has been completed.
The printer is processing data from another interface.	Wait until this data is processed.

Toner rubs off when you rub the printed surface.

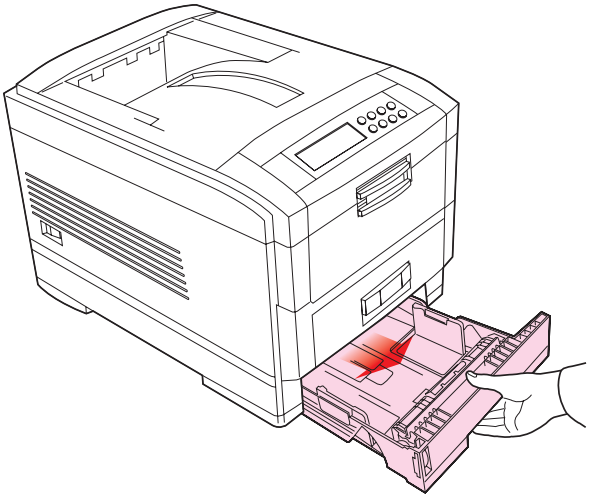
Possible Cause	Remedy
Media Weight and Media Type settings may not be appropriate.	Set the value of media weight to the next heaviest one.
Packing materials were left on the fuser when it was installed.	**Careful!** Fuser my be ***HOT***! Open the top cover and check to be sure that all the packing materials were removed from the fuser. To remove the fuser see “Changing the Fuser Unit” on page 346.

Maintenance

Adding Paper

The display indicates when the number of sheets of paper in any paper tray falls below 30.

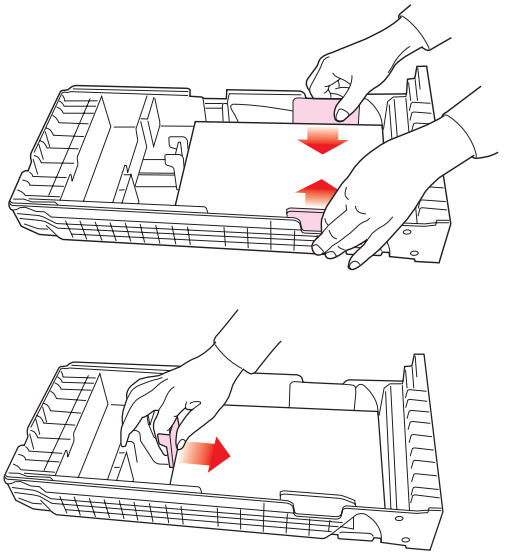
1. Remove the paper tray.



2. Remove the remaining sheets of paper.

3. Refill the tray (takes up to 530 sheets—a standard package of 20-lb [75 g/m^2] paper contains 500 sheets), then replace the sheets removed in step 2 (this ensures that the oldest paper is used first, to help prevent paper jams).

4. Check that the paper guides and rear stopper are snug against the paper.



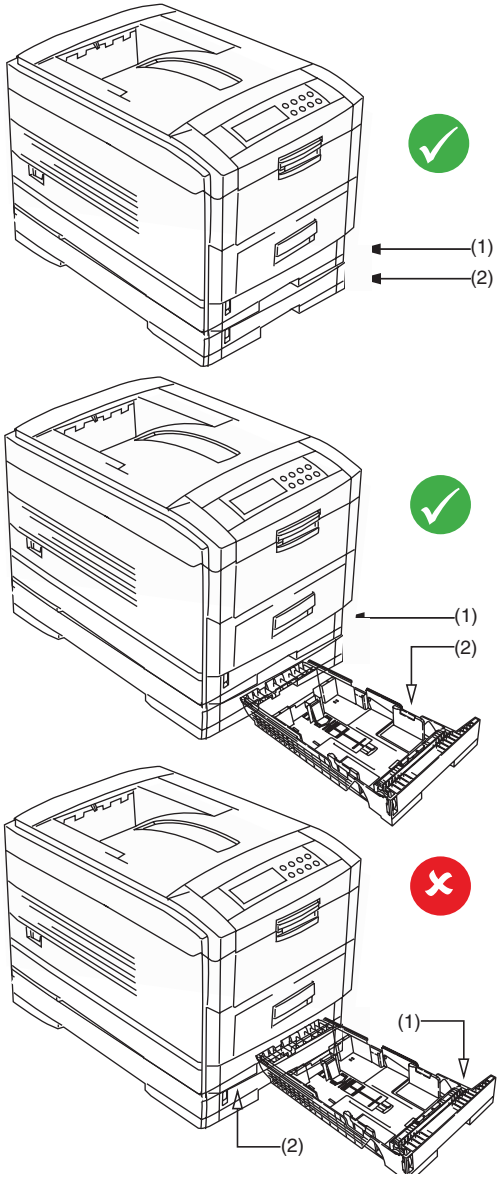
5. Close the paper tray *gently*.

Important!

To prevent jams:

- Make sure there is no space between the paper and the paper guides and rear stopper.
- Don't overfill the paper tray. Capacity depends on the type of paper and the paper weight (max. 530 sheets of 20 lb. [75 gm²] paper).
- Don't load damaged paper.
- Don't mix paper of different sizes, paper quality or thickness.
- Don't remove the paper tray during printing.

6. If installed, a lower paper tray cannot be used to print if there is no paper tray inserted above it.



Changing the Toner Cartridge

When the toner is running low, *** TONER LOW is displayed in the control panel (*** is the color name). If printing continues without replacing the toner cartridge, CHANGE *** TONER is displayed and printing is cancelled. Depending on the operating environment, print may become faint before this message is displayed. At this stage, remove the toner cartridge and check whether it is empty; if so, the toner cartridge needs to be replaced.

Cartridge life is approximately 10,000 letter-size pages at 5% print density. The first toner cartridge installed in a new image drum needs to be replaced after less than this amount because the toner cartridge has to fill a new image drum.

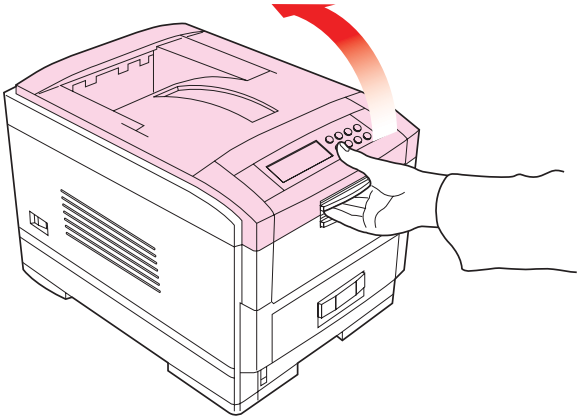
WARNING!

Take extreme care when handling toner.

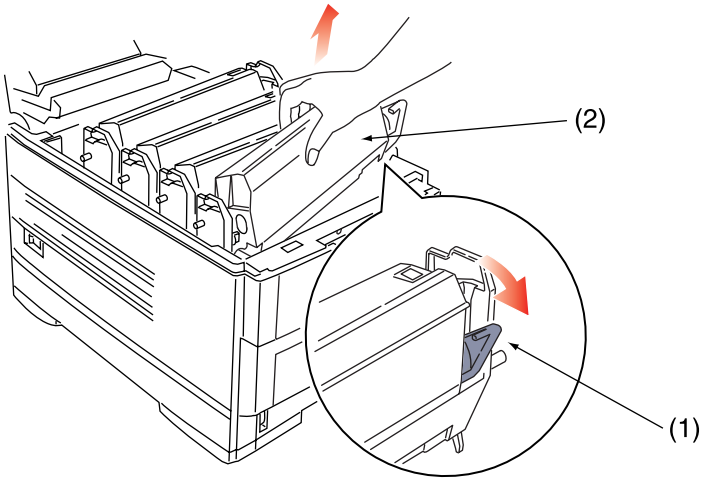
- ***Toner can be harmful if inhaled, swallowed or if it gets in the eyes.***
- ***Toner can also stain hands and clothing.***

See the Material Safety Data Sheets in your* Warranty, Regulatory and Safety Information *booklet for more information.

1. Switch off the printer and open the top cover.



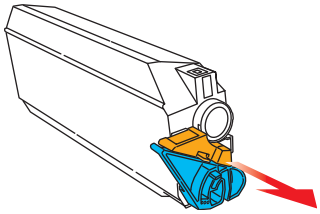
2. Check the color label of the toner cartridge to be changed.
3. Move the blue lever (1) on the right of the toner cartridge in the direction of the arrow as far as it will go then remove the toner cartridge (2), lifting the lever end of the cartridge first to disengage the locating peg on the image drum from the toner cartridge.



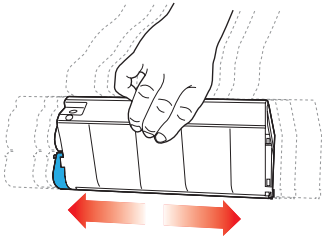
Important!

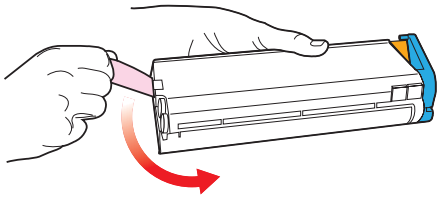
Dispose of the toner cartridge in accordance with local legislation.

4. Unpack the new toner cartridge and *remove the orange shipping clip*.



5. Shake the new toner cartridge back and forth several times. Then hold the toner cartridge horizontally and remove the tape.

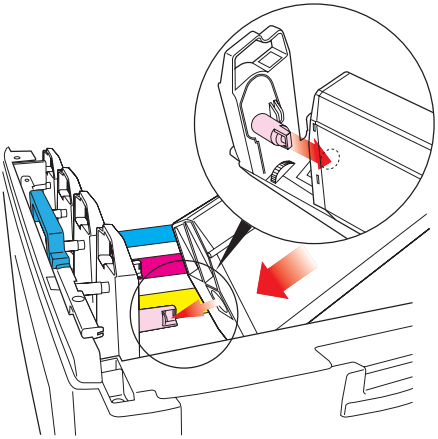




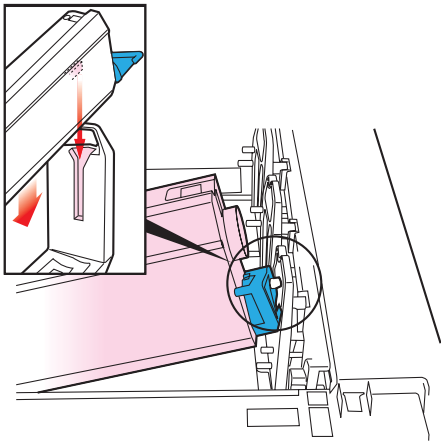
CAUTION!

Removing the tape exposes the toner release area. Do not move the blue toner release lever until the toner is fully installed in the image drum. If you move the lever at this point, toner will spill out of the cartridge.

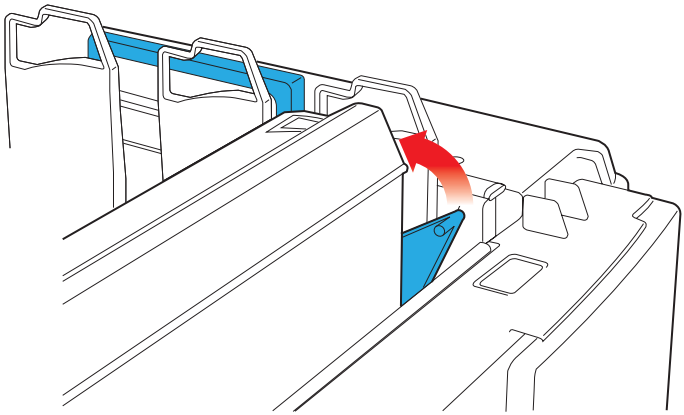
6. Insert the new toner cartridge into the image drum, left side first, engaging the drum locating peg in the hole in the toner cartridge.



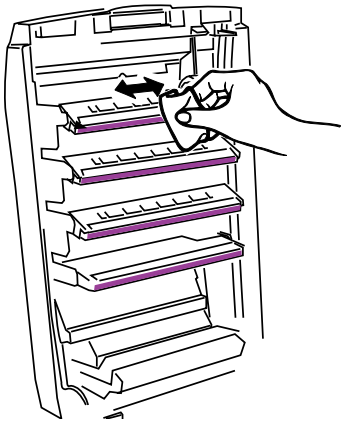
7. *Gently* push the toner cartridge down, engaging the locking pin into the groove on the image drum.



8. *Gently* push the colored lever toward the back of the printer until it stops. This releases the toner into the image drum.



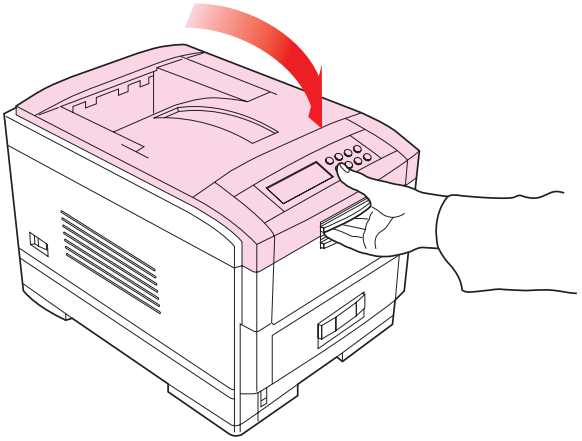
9. *Gently* wipe the LED head surface with LED lens cleaner or a soft tissue.



CAUTION

Do not use methyl alcohol or other solvents on the LED head otherwise damage to the lens surface will occur.

10. Close the top cover.



NOTE

After installing the new toner cartridge, the message on the display TONER LOW or CHANGE TONER should disappear. However, this sometimes does not disappear until printing has been carried out. If it still does not disappear, reinstall the toner cartridge.

Changing the Image Drum

When the image drum reaches the end of its product life, ***** CHANGE DRUM** is displayed in the control panel (*** is the color name). If printing continues without replacing the image drum, **CHANGE *** IMAGE DRUM** is displayed and printing is cancelled.

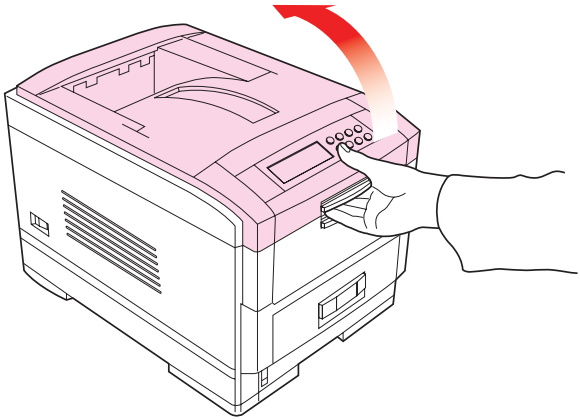
Change the toner cartridge and clean the LED head at the same time as changing the image drum.

Image drum life is approximately 23,000 sheets of letter-size media. This assumes a typical office environment where 20% of print jobs are one page emails, 30% are 3-page documents containing only words (no graphics) and 50% are print runs of 15 pages or more.

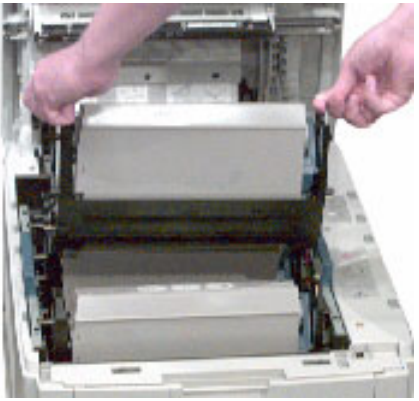
CAUTION!

- **Never expose the image drum to light for more than 5 minutes and never expose the image drum to direct sunlight.**
- **Never touch the surface of the green drum inside the image drum unit.**

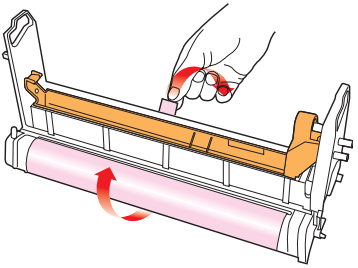
1. Switch off the printer and open the top cover.

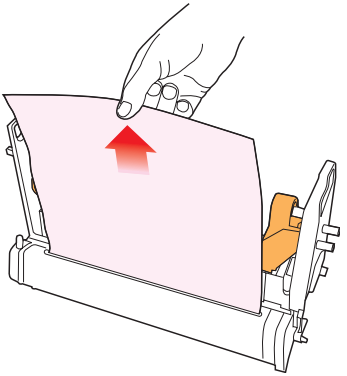


2. Remove the appropriate image drum/toner cartridge from the printer.

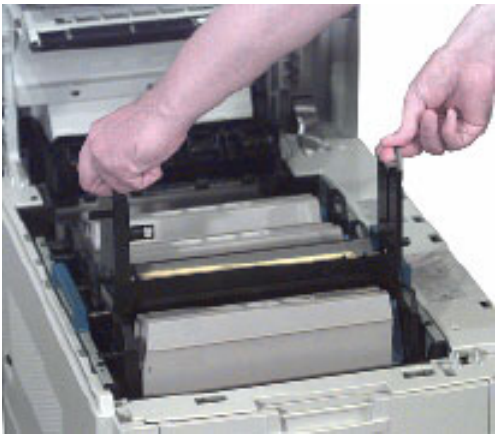


3. Make sure the replacement image drum is the correct color and remove it from the packaging.
4. Remove the protective sheet from the new image drum.

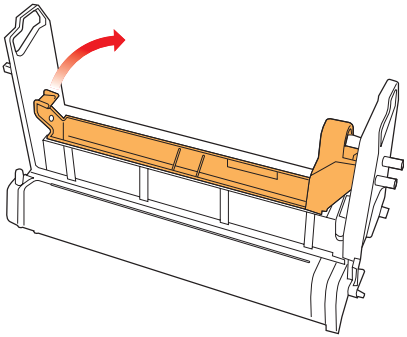




5. Install the new image drum in the printer.



6. Push the tab inwards and remove the blanking plate from the image drum.



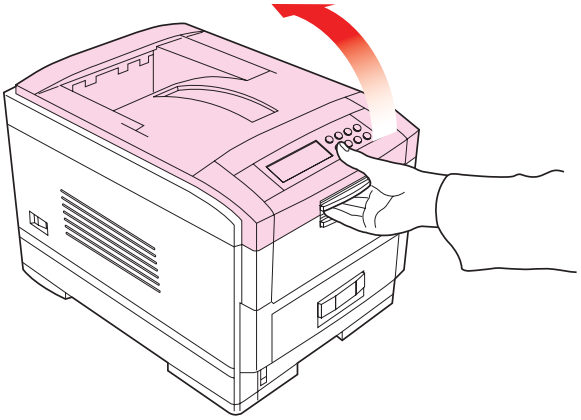
7. Install a new toner cartridge: see “Changing the Toner Cartridge” on page 333.

8. Close the top cover.

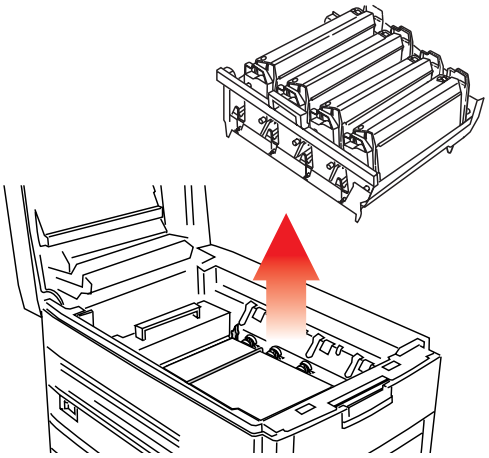
Changing the Transfer Belt

When the transfer belt reaches the end of its product life, CHANGE BELT UNIT is displayed in the control panel. Transfer belt life depends on the number of sheets per print job. When single sheets are printed, the overall transfer belt life is reduced.

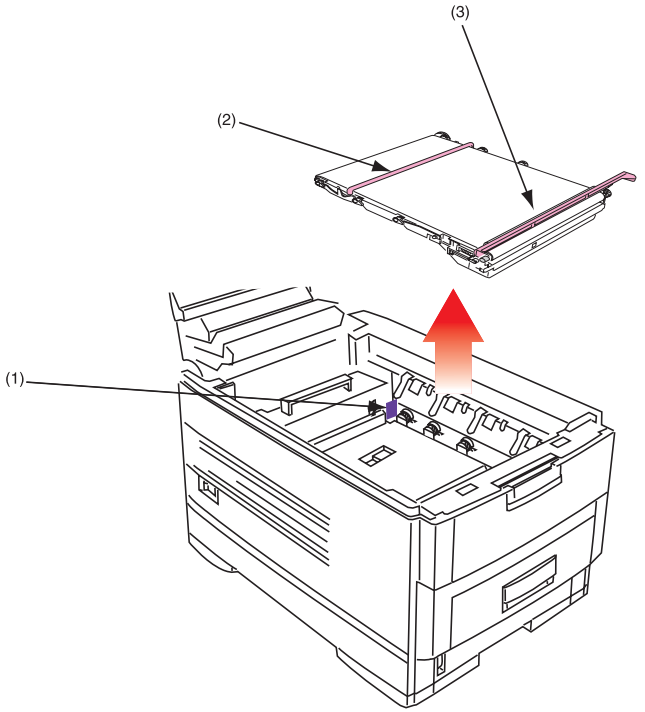
1. Switch off the printer and open the top cover.



2. Remove the cradle complete with the four image drums and toner cartridges from the printer.

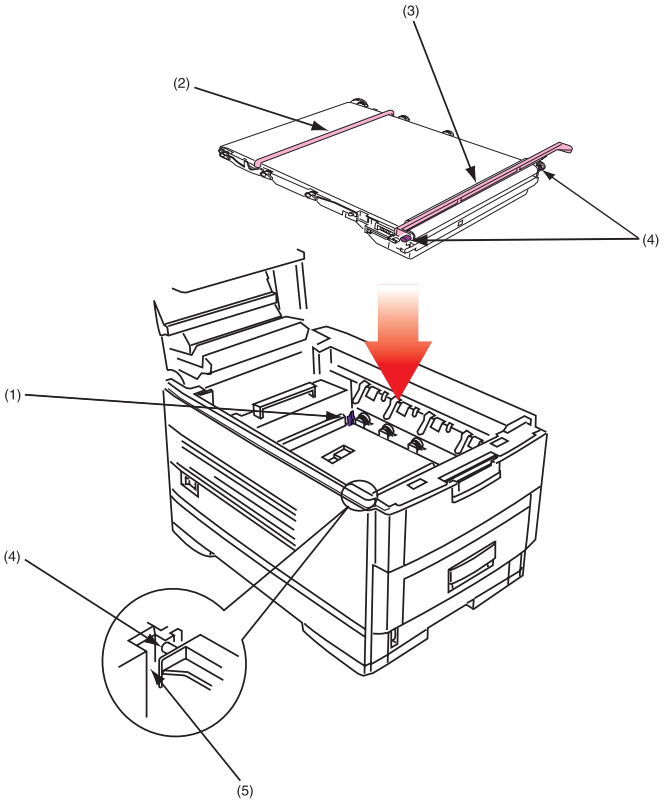


3. Press back the lock lever (1) and, using the handles (2 and 3), remove the old transfer belt from the printer.



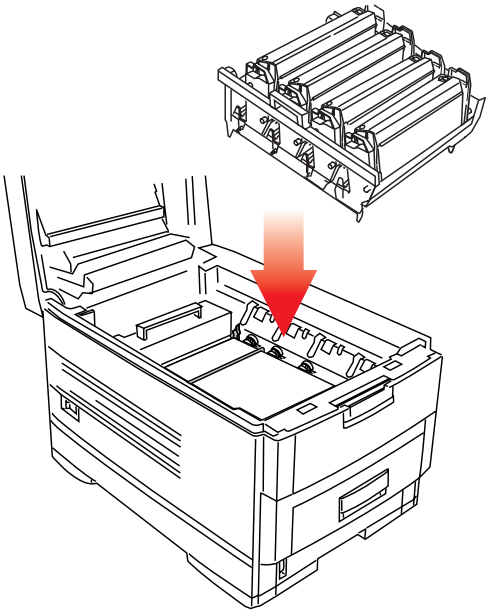
4. Remove the new transfer belt unit from its packaging.

5. Using the handles (2 and 3), align the pins (4) with the grooves (5) on the printer and insert the new transfer belt into the printer.

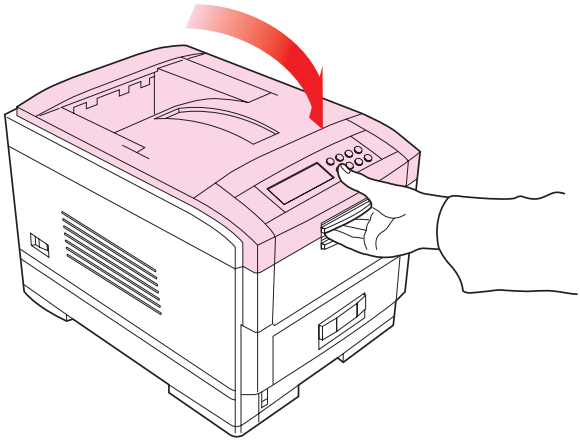


6. Move the lock lever (1) toward the front of the printer and ensure it locks the transfer belt into place.

7. Reinstall the cradle complete with the four image drums and toner cartridges in the printer.



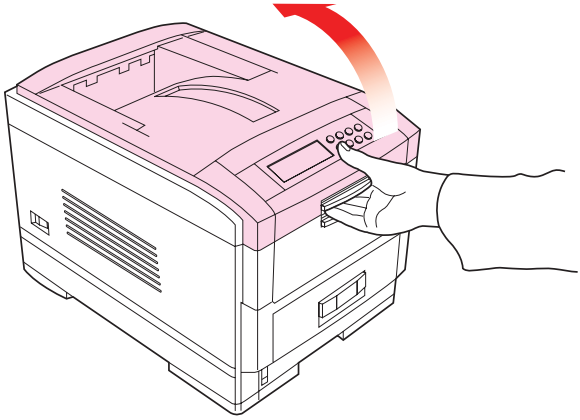
8. Close the top cover.



Changing the Fuser Unit

When the fuser unit reaches the end of its product life, CHANGE FUSER UNIT is displayed in the control panel. Fuser unit life is approximately 60,000 letter/A4 sheets.

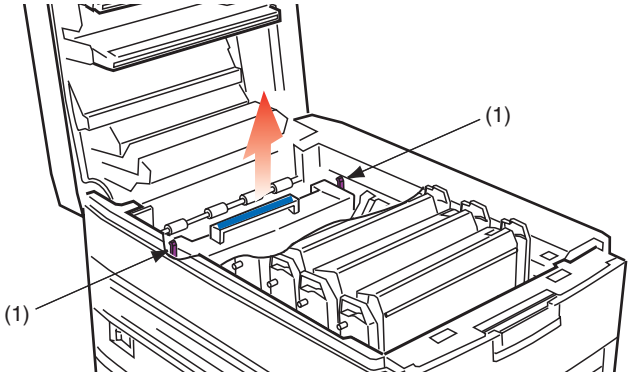
1. Switch off the printer and open the top cover.



WARNING!

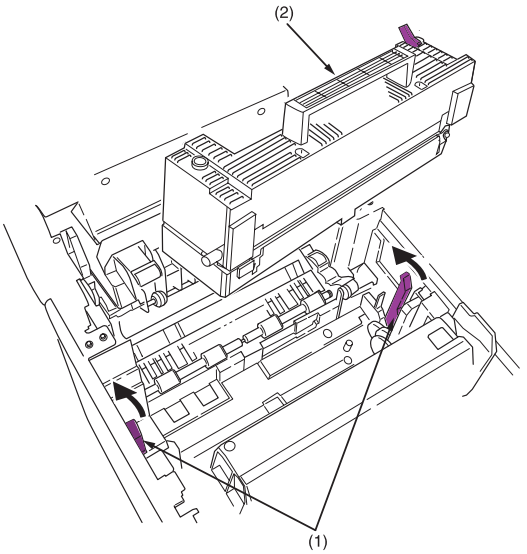
The fuser unit is very hot after printing. Always use the handle when lifting it.

2. Move the two locking levers (1) to the rear of the machine to release the fuser unit, then *use the handle* to remove the fuser from the printer.

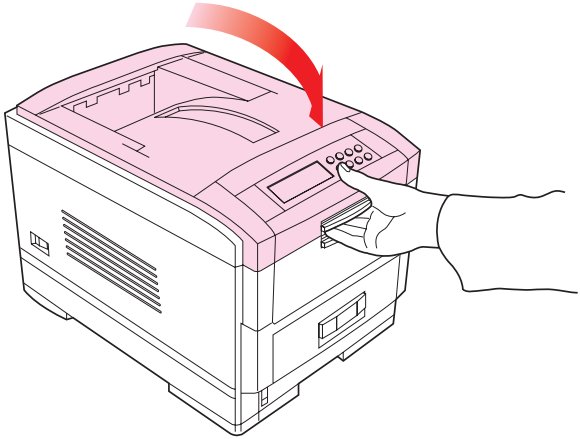


3. Unpack the new fuser unit and lift off the shipping tape at either end. As you remove the tape, the levers at either end of the fuser should move into the locked position.

4. Using the handle (2), install the new fuser unit into the printer. Make sure the two spring loaded locking levers (1) lock the fuser unit into place.



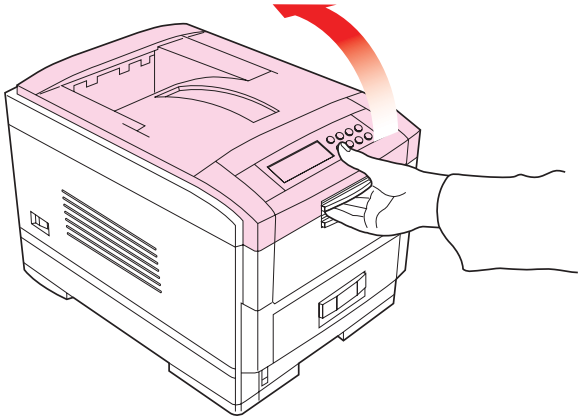
5. Close the top cover.



Cleaning the LED Heads

Clean the LED heads when printing does not come out clearly, has white line, or when text is blurred.

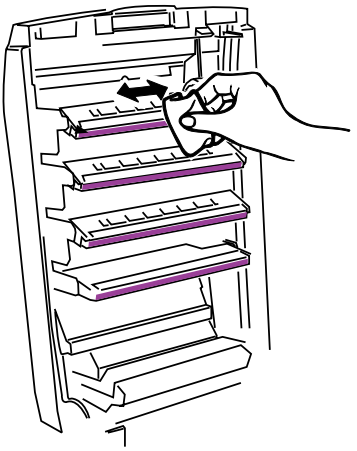
1. Switch off the printer and open the top cover.



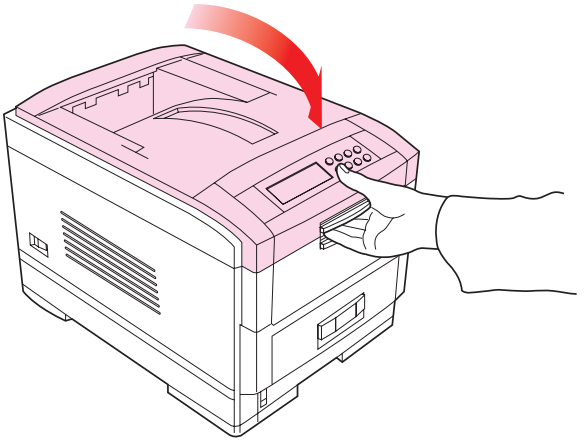
CAUTION!

Do not use methyl alcohol or other solvents on the LED head: damage to the lens surface will occur.

2. *Gently* wipe the LED head surface with LED lens cleaner or soft tissue.



3. Close the top cover.

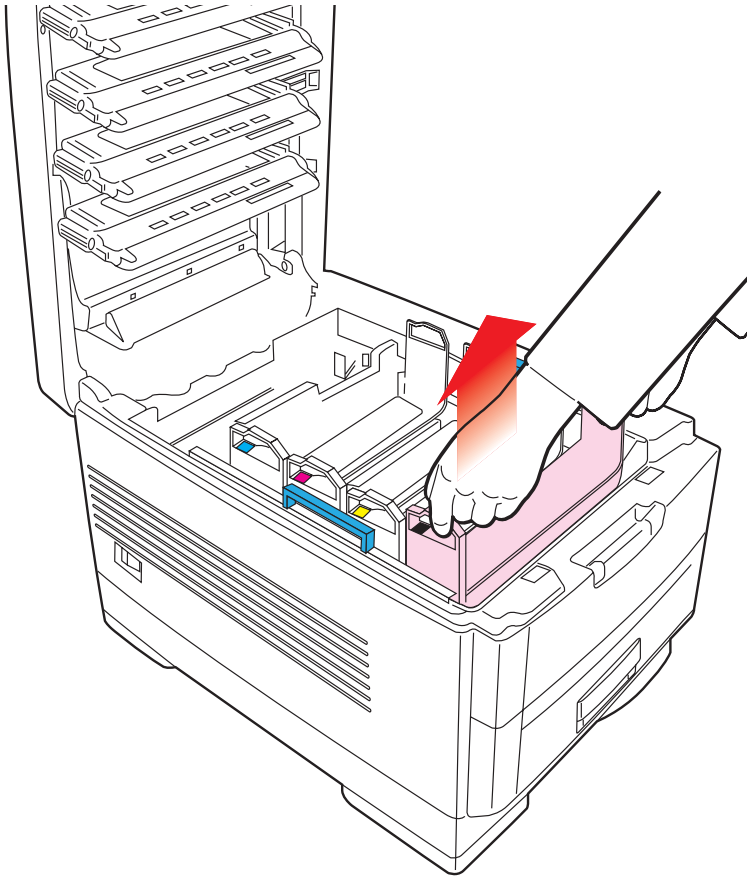


Transporting the Printer

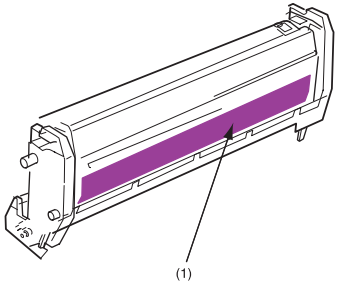
This printer is a precision machine. If it is transported without its protective packaging it may be prone to mechanical damage.

To prepare the printer for transportation:

1. Turn off the printer.
2. Disconnect the power cable and printer interface cable from the printer and remove any paper from the paper trays.
3. Open the top cover and remove the four image drums.



4. Seal the aperture on each image drum and its toner cartridge with plastic adhesive tape (1) to prevent any toner spillage during transportation.



5. Place the four image drums complete with their toner cartridges back into the printer.
6. Using the original packaging material, place the printer inside its box and seal the box.

Accessories

Depending on the configuration of your printer, you may wish to add one or more of the following options as your needs evolve:

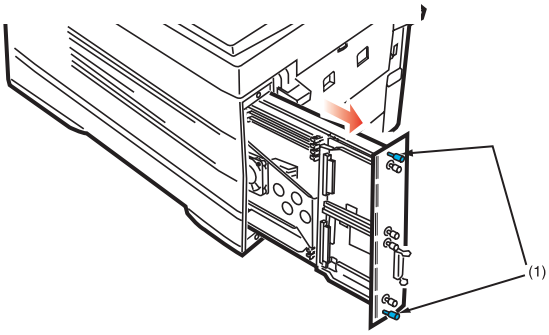
- Hard Disk Drive: see page 353
- Duplex Unit: see page 355
- Paper Trays: see page 356
- Additional Memory: see page 358

Internal Hard Disk Drive

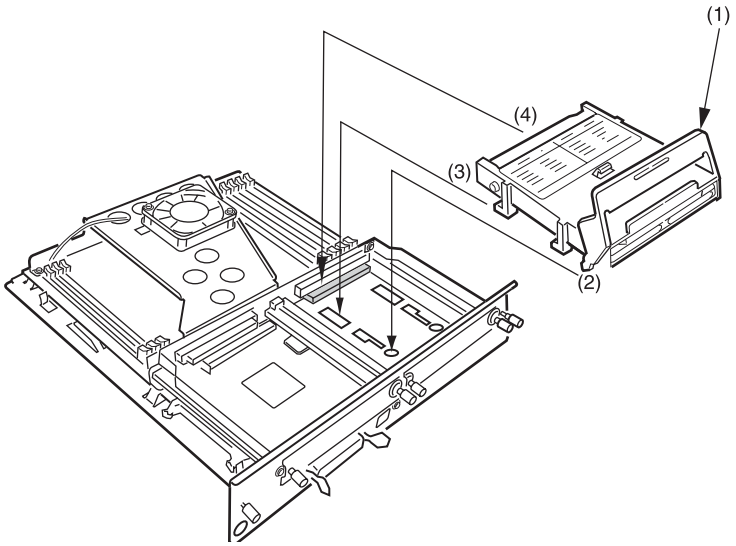
The optional internal hard disk (Sharp AR-C20HD10) is used for proof and print, password or secure printing.

Installing the Hard Disk Drive

1. Switch off the printer and disconnect the power cable and printer interface cable.
2. Loosen the two screws (1) and remove the main board.



3. Hold the hard disk drive by the locking handle (1).



4. Insert the handle locating lugs (2) and four locating feet (3) into the holes in the main board making sure the hard disk connector (4) starts to engage with the socket on the control board.
5. *Gently* push down on the locking handle (1) making sure the hard disk moves forward and fully engages with the socket.
6. Replace the main board and secure it with the two screws.
7. Connect the printer interface cable and power cable, then switch on the printer.
8. Print a Menu Map (see page 34) and check that the HDD appears at the top of the MenuMap. If it doesn't, turn the printer off then pull the main board back out and reseat the hard disk drive. Turn the printer on again and reprint the MenuMap.

NOTE

When initializing the hard disk, any fonts or print jobs that have been acknowledged will be erased.

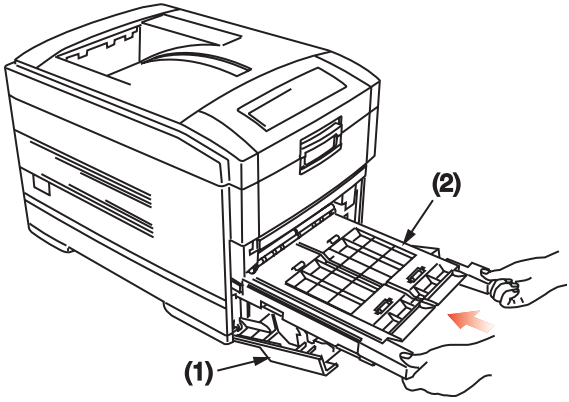
9. Engage the Hard Disk Drive in the printer driver(s): see the instructions supplied with your Hard Disk Drive.

Duplex Unit

The Duplex Unit (Sharp AR-C20ADU) permits printing on both sides of the paper.

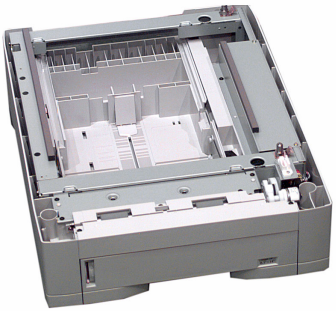
Installing the Duplex Unit

1. Switch off the printer and disconnect the power cable.



2. Open the front cover (1).
3. Insert the duplex unit (2) into the printer engaging the sides of the duplex unit in the slots in the printer.
4. *Gently* slide the duplex unit (2) fully into the printer.
5. Close the front cover (1).
6. Connect the power cable and switch the printer on.
7. The printer will automatically configure to include this option.
8. Engage the Duplex Unit in the printer driver(s): see the instructions supplied with your Duplex Unit.

Additional Paper Trays



Two additional paper trays (Sharp AR-C20PFU) can be installed, providing a maximum total paper capacity of approximately 1690 sheets, including the Multi-Purpose Tray.

Installing Additional Paper Trays

1. Switch off the printer and disconnect the power cable and printer interface cable.

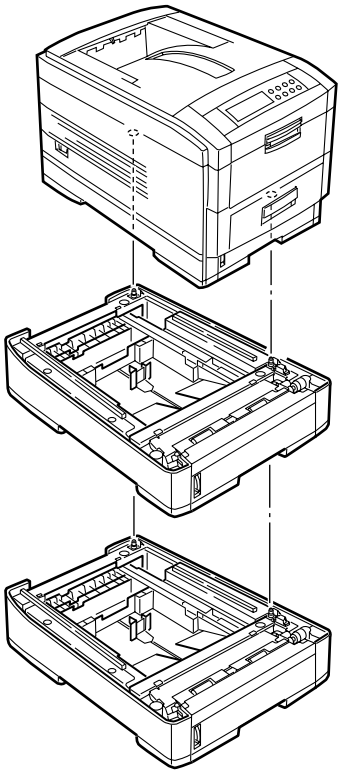
WARNING!

The printer weighs 106 lbs. (48 kg). 2 people are required to lift the printer safely and prevent any personal injury.

NOTE

If installing both additional paper trays, put the two additional paper trays together as one unit first, then install the printer on top of the two additional paper trays.

2. Lower the printer *gently* on to the additional paper tray aligning the holes and connection socket on the base of the printer with the locating pegs and connector on the additional paper tray unit.



3. Connect the printer interface cable and power cable, then switch on the printer.
4. Print a Menu Map (see “Printing the MenuMap” on page 34) and check that TRAY 2 (and TRAY 3 if installed) appear under MEDIA MENU.
5. The printer will automatically configure to include this option.
6. Engage the additional trays in the printer driver(s): see the instructions supplied with your paper tray.

Additional Memory

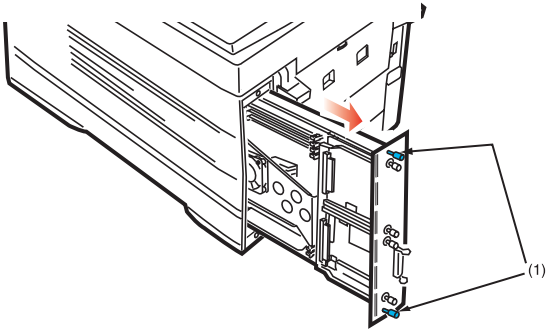
- Installing additional memory is recommended if carrying out duplex printing or if error messages appear when printing complex data.
- Also used for graphic intensive applications on Networks.
- Additional memory is available in 64Mb, 128Mb, and 256Mb modules. For more information see your authorized Sharp dealer.

Installing Additional Memory

NOTE

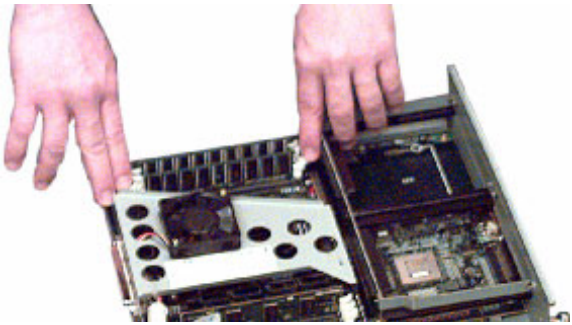
If the maximum amount of memory is being installed in the printer (three 256 MB modules), the memory modules that were originally installed must be removed.

1. Switch off the printer and disconnect the power cable and printer interface cable.
2. Loosen the two screws (1) and remove the main board.

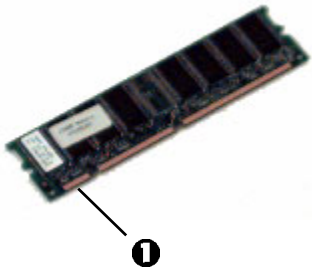


3. Insert the memory modules the slots as follows:

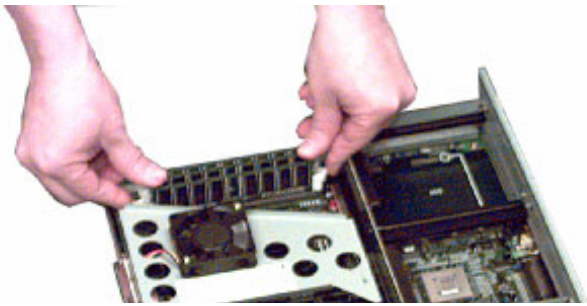
   a. Push out the white tabs at either end of the socket.



   b. Align the module with the narrow strip (1) on its metallic contact edge to the right (toward the slot identifier numbers) of the control board.



   c. Carefully insert the module in the socket, placing the ends into the slot in the lock tabs. Press down firmly, until you feel the board engage the connector, then make sure the white tabs come up to lock the module in place.



4. Replace the main board and secure it with the two screws.
5. Reconnect the printer interface cable and power cable, then switch on the printer.
6. Print a MenuMap (see page 34) and check that the Total Memory Size shown at the top of the MenuMap matches the memory now installed in the printer. If it doesn't, *turn the printer off* and pull out the main board and check to be sure that the modules are all *firmly seated* in their connectors.

Specifications

Print method.	LED exposed light source electronic photographic memory
Resolution	600 x 1200 dpi
Colors	Cyan, magenta, yellow, black (CMYK)
CPU	Power PC 750 processor, 32 bit RISC CPU, 450 MHz, 64 bit
Memory	64 Mb standard • 128 Mb required for the optional Duplex unit • Up to 1 Gb max with optional memory modules
Print language	PostScript3, PCL5c
Internal font	PostScript 3, PCL5c fonts
Print Start	First print time: 10 secs (mono), 15 secs (color) Warm up time: 90 secs
Parallel Interface	IEEE Std 1284-1994 parallel *Connection:* 36-pin receptacle *Cable:* IEEE Std 1284-1994 compatible cable of up to 1.8 meters *Transmission Mode:* Compatible, Nibble mode ECP *Interface Level:* • Low +0.0 – 0.8V High+2.4 – 5.0V
Universal Serial Bus (USB) interface	USB specification Version 1.1 *Connection:* USB Type B *Cable:* USB specification Version 1.1 cable (shielded) *Transmission Mode:* Full speed (12 Mbps + 0.25% maximum)
Power control	Self-powered device

Network	100BASE-TX/10BASE-T (option)
Print speed in pages per minute (ppm) [Print speed varies with paper size, media weight and paper feed.]	• Color: 20 ppm • Black & White: 24 ppm • Transparencies, Color: 12 ppm • Duplex Printing, Color: 13 ppm
Media size Trays 1, 2, 3	Letter, Legal-14, Legal-13.5, Legal-13, Executive A4, A5, B5 A6: *Tray 1 only*
Media size MP tray	Letter, Legal-14, Legal-13.5, Legal-13, Executive A4, A5, A6, B5 Envelopes: C5, DL, Com-9, Com-10, Monarch Custom (up to 1200 mm length)
Media weight	*Trays 1 to 3*: 20 to 47 lb. US Bond (75 to 177 g/m^2) *Multi-purpose tray*: 17 to 54 lb. US Bond—up to 113 lb. Index—(64 to 203 g/m^2) *Duplex unit*: 20 to 28-lb. US Bond (75 to 105 g/m^2)
Paper capacity (depending on paper weight)	Paper tray: 530 sheets approx. Manual feed: 100 sheets approx.
Exit capacity (depending on paper weight)	Face up: 100 sheets approx. Face down: 500 sheets approx.
Print margin	¼-inch (6.4 mm) minimum
Print accuracy	*Start*: ±2 m *Paper skew*: ±1 mm per 100 mm *Image expansion/compression*: ±1 mm per 100 mm
Startup time	Less than 3 min. from powering up (25°C)
Power supply	120 (115-127) volts AC, 60 Hz ± 2 Hz

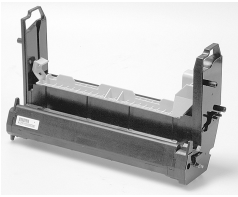
Power consumption	*Operating:* 1350 max.; 500 W average (25°C) *Standby:* 1200 max.; 150 W average (25°C) *Power Saving:* 45 W max.
Operating environment	*Operating*: • 50 to 90°F (10 to 32 °C) • 20 to 80% RH maximum wet bulb temperature 77°C (25°C) *For maximum print quality* • 62.6 to 80.6°F (17 to 27 °C) • 50 to 70% RH *Off* • 32 to 110°F (0 to 43 °C) • 10 to 90% RH *Storage* • -14 to 110°F (-10 to 43°C) • 10 to 90% RH
Product life	5 years or 600,000 sheets
Dimensions	*Width*: 16.9 inches (430 mm) *Depth*: 24.4 inches (620 mm) *Height*: 16.9 inches (430 mm)
Weight	106 lbs. (48 kg) not including optional accessories and paper

Consumables

Toner

Description	Order No.
Black Toner	AR-C20TBU
Cyan Toner	AR-C20TCU
Magenta Toner	AR-C20TMU
Yellow Toner	AR-C20TYU

Drums

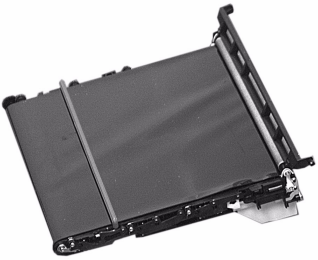


Description	Order No.
Black Image Drum	AR-C20BDR
Cyan Image Drum	AR-C20CDR
Magenta Image Drum	AR-C20MDR
Yellow Image Drum	AR-C20YDR

Fuser Unit

Description	Order No.
Fuser Unit, 120V	AR-C20FU1

Transfer Belt



Description	Order No.
Transfer belt	AR-C20TB1

Factory Default Settings

Print Menu

Item	Factory Default Setting
COPIES	1
DUPLEX[a]	OFF
BINDING	LONG EDGE
PAPER FEED	TRAY1
AUTO TRAY SWITCH	ON
TRAY SEQUENCE	DOWN
MP TRAY USAGE	FEED WHEN MISMATCHING
MEDIA CHECK	ENABLE
TRANSPARENCY DETECT	AUTO
RESOLUTION	600 X 1200 dpi
TONER SAVE MODE	OFF
MONO-PRINT SPEED	AUTO
ORIENTATION	PORTRAIT
LINE PER PAGE	60
EDIT SIZE	CASSETTE SIZE

a. Appears only when the optional Duplex Unit is installed.

Media Menu

Item	Factory Default Setting
TRAY1 MEDIATYPE:	PLAIN
TRAY1 MEDIAWEIGHT	AUTO
TRAY2 MEDIATYPE[a]	PLAIN
TRAY2 MEDIAWEIGHT[a]	AUTO
TRAY3 MEDIATYPE[b]	PLAIN
TRAY3 MEDIAWEIGHT[b]	AUTO
MP TRAY PAPERSIZE	LETTER
MP TRAY MEDIA	PLAIN
MP TRAY MEDIAWEIGHT	AUTO
UNIT OF MEASURE	INCH
X DIMENSION	8.5 INCH
Y DIMENSION	11 INCH

a. Appears only if optional Paper Tray is installed.
b. Appears only if two optional Paper Trays are isntalled.

Color Menu

Item	Factory Default Setting
AUTO DENSITY MODE	AUTO
ADJUST DENSITY	[EXECUTE]
COLOR TUNING	[PRINT PATTERN]
CYAN HIGH-LIGHT	0
CYAN MID-TONE	0
CAN DARK	0
MAGENTA HIGH-LIGHT	0
MAGENTA MID-TONE	0
MAGENTA DARK	0
YELLOW HIGH-LIGHT	0
YELLOW MID-TONE	0
YELLOW DARK	0
BLACK HIGH-LIGHT	0
BLACK MID-TONE	0
BLACK DARK	0
CYAN DARKNESS	0
MAGENTA DARKNESS	0
YELLOW DARKNESS	0
BLACK DARKNESS	0
ADJUST REGISTRATION	[EXECUTE]
CYAN REG FINE ADJUST	0
MAGENTA REG FINE ADJUST	0
YELLOW REG FINE ADJUST	0
INK SIMULATION	OFF
INK LIMIT	DARK
CMY100% density	DISABLE

System Config Menu

Item	Factory Default Setting
POWER SAVE DELAY TIME	60 mins.
USB PS-PROTOCOL	RAW
NETWORK PS-PROTOCOL	RAW
PERSONALITY	AUTO EMULATION
CLEARABLE WARNING	ON
AUTO CONTINUE	OFF
MANUAL TIMEOUT	60 sec.
WAIT TIMEOUT	40 sec.
LOW TONER	CONTINUE
JAM RECOVERY	ON
ERROR REPORT	OFF
LANGUAGE	ENGLISH

PCL Emulation Menu (Windows Only)

Item	Factory Default Setting
FONT SOURCE	RESIDENT
FONT No.	I000
FONT PITCH	10.00 cpi
FONT HEIGHT	12.00 point
SYMBOL SET	PC-8
A4 PRINT WIDTH	78 column
WHITE PAGE SKIP	OFF
CR FUNCTUION	CR
LF FUNCTION	LF
PRINT MARGIN	NORMAL
TRUE BLACK	OFF
PEN WIDTH ADJUST	ON

PPR Emulation Menu (Windows Only)

Item	Factory Default Setting
CHARACTER PITCH	10 cpi
FONT CONDENSE	10 cpi to 12 cpi
CHARACTER SET	SET - 2
SYMBOL SET	IBM-437
LETTER 0 STYLE	DISABLE
ZERO CHARACTER	NORMAL
LINE PITCH	6 lpi
WHITE PAGE SKIP	OFF
CR FUNCTUION	CR
LF FUNCTION	LR
LINE LENGTH	80 column
FORM LENGTH	11 inches
TOF POSITION	0.0 inch
LEFT MARGIN	0.0 inch
FIT TO LETTER	ENABLE
TEXT HEIGHT	SAME

FX Emulation Menu (Windows Only)

Item	Factory Default Setting
CHARACTER PITCH	10 cpi
CHARACTER SET	SET - 2
SYMBOL SET	IBM-437
LETTER 0 STYLE	DISABLE
ZERO CHARACTER	NORMAL
LINE PITCH	6 lpi
WHITE PAGE SKIP	OFF
CR FUNCTUION	CR
LINE LENGTH	80 column
FORM LENGTH	11 inch
TOF POSITION	0.0 inch
LEFT MARGIN	0.0 inch
FIT TO LETTER	ENABLE

Parallel Menu (Windows Only)

Item	Factory Default Setting
PARALLEL	ENABLE
BI-DIRECTION	ENABLE
ECP	ENABLE
ACK WIDTH	NARROW
ACK/BUSY TIMING	ACK-IN-BUSY
I-PRIME	DISABLE
OFFLINE RECEIVE	DISABLE

USB Menu

Item	Factory Default Setting
USB	ENABLE
SOFT RESET	DISABLE
OFFLINE RECEIVE	DISABLE

Network Menu

Item	Factory Default Setting
TCP/IP	ENABLE
NETWARE	ENABLE
ETHERTALK	ENABLE
NETBEUI	ENABLE
FRAME TYPE	AUTO
DHCP/BOOTP	ENABLE
RARP	DISABLE
IP ADDRESS	0.0.0.0
SUBNET MASK	0.0.0.0
GATEWAY ADDRESS	0.0.0.0
PRINT SETTINGS	OFF
INITIALIZE	OFF

Memory Menu

Item	Factory Default Setting
RECEIVE BUFF SIZE	AUTO
RESOURCE SAVE	OFF
FLASH INITIALIZE	EXECUTE
PS FLASH RESIZE	0.5MB

Disk Maintenance Menu

Applies only when optional Hard Disk Drive is installed.

Item	Factory Default Setting
PARTITION #1	PCL
PARTITION #2	COMMON
PARTITION #3	PS

System Adjust Menu

Item	Factory Default Setting
X ADJUST	0.0 mm
Y ADJUST	0.0 mm
DUPLEX X ADJUST[a]	0.0 mm
DUPLEX Y ADJUST[a]	0.0 mm
TRAY1 LEGAL14 PAPER	LEGAL 14
TRAY2 LEGAL14 PAPER[b]	LEGAL 14
TRAY3 LEGAL14 PAPER[c]	LEGAL 14
PCL TRAY2 ID#[a]	5
PCL TRAY3 ID#[b]	20
PCL MP TRAY ID#	4
HEX DUMP	EXECUTE

a. Appears only if optional Duplex Unit is installed.
b. Appears only if optional Paper Tray is installed.
c. Appears only if two optional Paper Trays are installed.

Maintenance Menu

Item	Factory Default Setting
EEPROM RESET	EXECUTE
POWER SAVE	ENABLE
PAPER BLACK SETTING	0
PAPER COLOR SETTING	0
TRANSPR BLACK SETTING	0
TRANSPR COLOR SETTING	0

Software Utilities

Overview

Included with your printer is a selection of software utility programs designed to help you get the most out of your printer. Load these programs from the CD supplied with your printer.

Utilities included:

- **Color Swatch Utility**
- **PDF Print Direct**
- **Network Utilities**
  - Print SuperVision
  - Network Printer Status
  - Sharp LPR Utility

For network configuration utilities, see the separate on-line Network User's Guide.

Color Swatch Utility

Color Swatch Samples

The Color Swatch Utility allows you to print color samples or swatches on your color printer. The swatches are used with your software program to select and reproduce color accurately. The swatches represent selected samples of the your printer's color palette and can be used to find the desired colors for your printed documents.

NOTE

- **Your software may not be able to match colors using the swatch information. You may need to use other matching methods.**
- **The color swatch samples do not show all the colors your color printer can print.**
- **Other factors influence how you see color: the color and finish of the paper, ambient light, even the color surrounding the one you are looking at.**

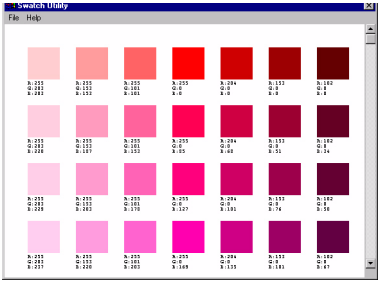
Loading the Utility

First, install the utility using the Menu Installer (Windows). To load the utility:

Click **Start** → **Programs** → **Color Swatch** → **Color Swatch Utility**.

Selecting Colors

When you load the utility, a swatch page displays commonly used colors. Select print to print sample pages.



Color Samples

Use the color blocks to pick the specific colors that you want to appear in your printed document.

Color Values

Each color block, or sample, is identified with information your software package needs to reproduce that color accurately. The numbers under each block specify the amounts of the primary colors—red (R), green (G), and blue (B)—that mix to form each particular shade. The amounts are given as a numerical value between 0 and 255.

Creating Custom Swatch Colors

If you don't find your desired color, you can create or customize colors:

1. Select **Custom Swatch** from the **File** menu.
2. On the pop-up window, there are 3 slide bars that allow you to customize swatches:
   - **Hue** bar changes the hue of the swatches, for example, red to green or blue to yellow.
   - **Saturation** bar changes vividness.
   - **Lightness** bar changes darkness.
3. Adjust the bars until you see the desired color. Color variations are created to help you find the best match.
4. Click **OK**, then print the custom swatch page.
5. Repeat these steps if you still don't find the desired printed color.

NOTE

- **The Swatch Utility does not guarantee that the printer will print the same color displayed on your monitor. Consider the displayed color as a reference.**
- **The printer may not be able to print the exact color that you desire.**

For additional information, including **Applying Color Value in your Application**, and **Setting Monitor Color**, see the Swatch Utility Read-me file located in the Windows Programs list.

PDF Direct Print Utility

PDF Direct Print allows you to send a selected PDF file directly to the printer, a faster and easier process than using Adobe Acrobat separately before printing. PDF Direct Print also lets you set paper source, copies, 2-sided printing, print page range and other items.

To use PDF Direct Print:

- *The optional built-in hard disk must be installed* (see page 353).
- 128MB or larger memory is recommended.
- Supports version PDF 1.4 (Acrobat 5.0) or below.
- A font environment on your system.

NOTE

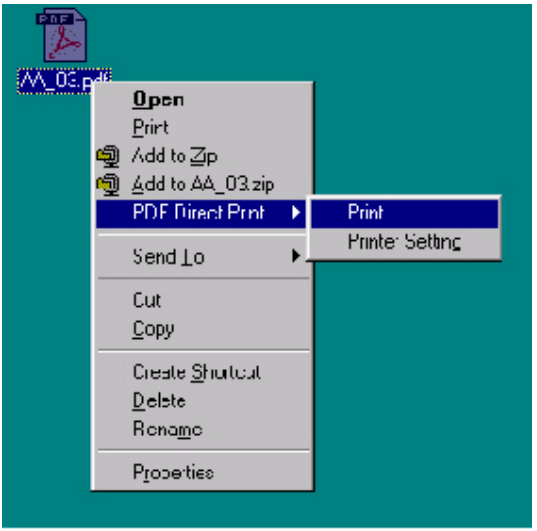
Some PDF files may not be able to print correctly.

Starting

To start PDF Direct Print:

1. Right-click on the file your want to print in Windows Explorer, or on the file icon on the Desktop.

2. Click **PDF Direct Print**, then click **Print**.



The **Start** screen provides the following features:

- Select Print
- Paper Source
- Copies
- 2-sided printing
- Binding
- Collate
- Fit to page
- Print page range
- Restore Default
- Save Settings
- Print
- Cancel
- Help
- About

PDF Version Check

The version level of PDF files supported is version 1.4 (Acrobat 5.0) or below. A “Warning” dialog displays for any PDF file whose version is not supported.

NOTE

If when attempting to PDF-direct-print a file, “ERROR:PDF to PS conversion failed” displays, the file contains an embedded font not installed on the system. Using Acrobat, delete the text that is embedded, or unembed the embedded font. In Acrobat, select Tool → Touchup → Text attribute. Remove the checkmark in the Embed box.

For additional information, see the PDF Print Direct **Help** file in the PDF Direct Print Utility.

PrintSuperVision

PrintSuperVision is a web-based application for managing printing devices connected to a network. PrintSuperVision provides access to networked printer data for monitoring, reporting and managing networked printers. It provides a full range of management functions for Sharp printers, and for other brands of printers as well.

Features

- Provides real-time status of all your printers to monitor and report printer usage, manage consumables usage and replenishment.
- Administrator interface to the system is via a standard web browser enabling you to check on printer status and compatible multi-function devices from anywhere on the web.
- Performs initial discovery and configuration of printing devices connected to network.
- View groups of printers by list, floorplan or maps.
- Monitors devices over time, including maintenance data, and saves data for statistical reports.
- Sends mail alerts of events affecting device functionality.

- Generates reports on-screen or in XHTML, Excel and XML formats, plus Text and CSV formats.

Types of Users

- **Guest users**, without username, can get basic information about devices, such as type, status and location of printing devices.
- **Standard users**, in addition to guest user information, standard users can get information about printing resources, configure e-mail alerts, and get basic statistics reports.
- **Administrators** can manage devices, maps, alerts, user accounts, maintenance data, and create comprehensive statistics reports.

Typical usage scenarios

- The network administrator in a large organization can get customized daily reports of the status of all printers including usage reports. User accounts can be configured so that a person in each department can manage their local printers.
- The system can be set to alert the local user and the administrator of problems. The administrator can log into the PrintSuperVision system from any client machine and manage printers on different sites, looking at a map view to see instantly the status of all the printers.
- The administrator can keep a close track of the cost of the printers including tracking maintenance. PrintSuperVision also provides a consumables prediction facility to advise when consumable will need replacing based on current printer usage (Sharp color printers).

System Requirements

Server Software

Pentium 75, 64MB or better with CD support running:

- Windows™ 98 with Microsoft Personal Web Server Version™, available for free download from Microsoft™ as Option Pack 4.0.

- Windows NT4 Workstation, SP6.0a, Microsoft Personal Web Server Version, available for free download from Microsoft as Option Pack 4.0
- Windows 2000 or NT4 Server SP6.0a, Microsoft IIS™, available for free download from Microsoft as Option Pack 4.0

Client Software

- Microsoft Internet Explorer 5.0 or above
- Netscape Navigator 6.0 or above
- Recommended minimum screen resolution of 1024 x 768 pixels

Additional Information

For more information, click on **Help** in the PrintSuperVision program.

Network Printer Status Utility

This utility creates an additional tab (STATUS) in the PostScript and PCL drivers that allows the client to monitor the selected printer's status.

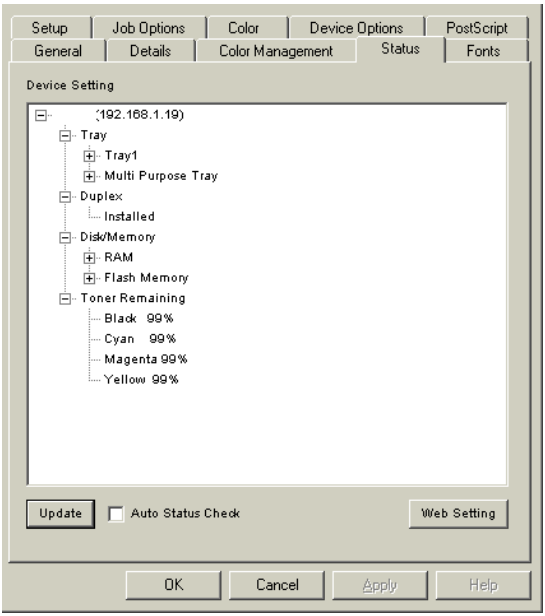
To Install

1. Insert the CD supplied with your printer into the CD-ROM drive. (*If CD does not AutoPlay, click Start → Run → Browse. Browse to your CD-ROM and double-click Install.exe, then click OK.*)
2. Click **Network Software** → **Administration Tools** → **Network Printer Status**. Follow the on-screen instructions.

To Open

1. Click **Start** → **Settings** → **Printers**. Right-click the Sharp Printer icon, click **Properties**.
2. Click on the **STATUS** tab.

3. Click the **UPDATE** button to see device settings. The following screen displays:



Click on an item to see this information:

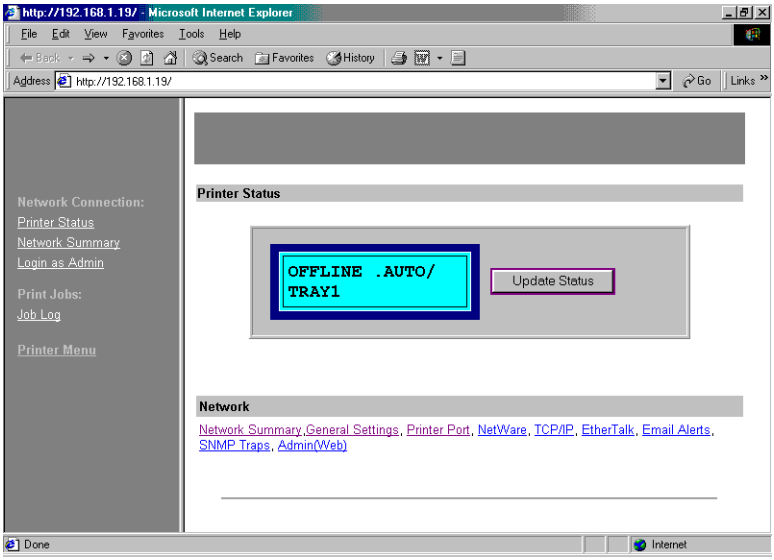
Trays:	Paper Type, weight
Duplex:	Installed/not installed
Disk/Memory:	RAM size and % used; Flash Memory size and % used
Toner Remaining:	% toner remaining is all cartridges

NOTE

If the Automatic Status Check box is checked, this utility will "ping" the printer each time you open the Printer Properties dialog in the printer driver. This will severely slow down the opening of this dialog.

Checking the Printer Status

Click the WEB SETTING button. The following screen displays:



Click on the items listed on the left to see:

- Network Summary
- Login for Administrators
- Job Login
- Printer Menu

To see real-time printer status, click the **UPDATE STATUS** button.

Sharp LPR Utility

The Sharp LPR Utility allows you to print directly to a printer on the network without a print server. It creates a Sharp Printer Port, and installs a pop-up status box so you can monitor printer status.

Sharp LPR operates in Windows Me/98/95, Windows NT 4.0, Windows 2000, and Windows XP operating systems.

How to Install

The LPR Utility supports TCP/IP. Your network administrator will first need to set up an IP address and TCP/IP properties for your printer.

1. To install the utility, insert the CD supplied with your printer into the CD-ROM drive.
   (*If CD does not AutoPlay, click Start → Run → Browse. Browse to your CD-ROM driver and double-click Install.exe, then click OK.*)
2. Click **Network Software** → **Installation/Config** → **LPR Utility**. Follow the on-screen instructions.

LPR Status box

The LPR Utility Status Box displays the following information:

- **Printers**: Names of added printers (You can add up to 30 printers)
- **Status**: LPR Utility status (empty, connecting, sending, paused, checking status, not connected)
- **Finish**: Number of completed jobs.
- **Queue**: Number of jobs waiting to be printed.

Additional Information

For help using the LPR Utility, click on **HELP** in the program.

Index

A

Additional memory
- Windows 2000 140
- Windows Me/98/95 198
- Windows NT 4.0 254
- Windows XP 77

Additional paper trays 356

B

Block device menu 69

Booklets 181
- Windows 2000 181
- Windows Me/98/95 233
- Windows NT 4.0 294
- Windows XP 122

C

Changing defaults
- Windows 2000 147
- Windows Me/98/95 203
- Windows NT 4.0 261
- Windows XP 84

Choosing a color matching method
- Windows 2000 156
- Windows Me/98/95 210
- Windows NT 4.0 273
- Windows XP 96

Collating
- WIndows 2000 186
- Windows Me/98/95 239
- Windows NT 4.0 298
- Windows XP 127

Color matching, PCL driver
- Windows 2000 156
- Windows Me/98/95 213
- Windows NT 4.0 275
- Windows XP 99

Color matching, PostScript
- Windows 2000 162
- Windows Me/98/95 216
- Windows NT 4.0 278
- Windows XP 102

Color menu 47, 69

Color swatch utility 375

Color swatch utility, PCL
- Windows 2000 161
- Windows Me/98/95 215
- Windows NT 4.0 277
- Windows XP 101

Components 14

Confidential documents
- Windows 2000 190
- Windows Me/98/95 245
- Windows NT 4.0 302
- Windows XP 131

Connection
- Power cable 30

Control panel 31

Custom page sizes 172
- Windows Me/98/95 226
- Windows NT 4.0 284
- Windows XP 112

D

Display language 33

Drivers, printer
- Windows 2000 139
- Windows Me/98/95 197
- Windows NT 4.0 253
- Windows XP 76

Duplex printing 178
Windows 2000 178
Windows Me/98/95 231
Windows NT 4.0 291
Windows XP 119
Duplex unit 355
Windows 2000 145
Windows Me/98/95 202
Windows NT .4.0 259
Windows XP 82

E

Envelopes 39
Error messages 309

F

Factors that affect color printing
Windows 2000 153
Windows Me/98/95 207
Windows NT 4.0 270
Windows XP 93
Font substitution
Windows Me/98/95 240
Fuser unit 346
FX emulation menu 58

H

Hard disk 353
Hard disk drive
Windows 2000 141
Windows Me/98/95 200
Windows NT 4.0 255
Windows XP 78

I

Image drum 339
Information menu 43

L

Labels, recommended 39
LED head 349
Location 13
LPR utility 385

M

Maintenance
Cleaning LED head 349
Fuser unit 346
Image drum 339
menu 65
Toner cartridge 333
Transfer belt 342
Manual feed 29
Media
recommendations 38
Media default
Windows 2000 147
Windows Me/98/95 203
Windows NT 4.0 261
Windows XP 84
Media Menu 46
Memory menu 62
Memory, enabling
Windows 2000 140
Windows Me/98/95 198
Windows NT 4.0 254
Windows XP 77
Menu settings 33, 43

N

Network menu 61
Network printer status utility ...382
Windows 2000 151
Windows Me/98/95 205
Windows NT 4.0 268
Windows XP 91

N-up printing
Windows 2000.....170
Windows Me/98/95 224
Windows NT 4.0.....282
Windows XP.....110

O

OP menu.....67
Optional paper trays
Windows 2000.....143
Windows Me/98/95 201
Windows NT 4.0.....257
Windows XP.....80
Options
Additional paper trays.....356
Duplex unit 355
Internal hard disk 353

P

Paper
Feed, selecting 35
Loading.....25
Manual feed 29
Sizes.....36
Types.....38
Paper feed.....35
Paper feed default
Windows 2000.....147
Windows Me/98/95 203
Windows NT 4.0.....261
Windows XP.....84
Paper size default
Windows 2000.....147
Windows Me/98/95 203
Windows NT 4.0.....261
Windows XP.....84
Paper trays, optional
Windows 2000.....143
Windows Me/98/95 201
WIndows NT 4.0 257
Windows XP.....80
Parallel menu.....60
PCL emulation menu 52
PDF direct print utility 378
Peak power control menu.....69
Posters
Window 2000 196
Windows Me/98/95 251
Windows NT 4.0.....308
Windows XP.....137
PostScript color matching
Windows 2000.....164
Windows Me/98/95 219
Windows NT 4.0.....280
Windows XP.....104
Power cable.....30
PPR emulation menu.....55
Print Jobs Menu 43
Print menu.....44
Printer
Changing display language.....33
Components.....14
Location 13
Printing the MenuMap.....34
Unpacking.....12
Printer drivers
Windows 2000.....139
Windows Me/98/95 197
Windows NT 4.0.....253
Windows XP.....76

Printer settings
Changing....42
Confirming....42
List of settings....43
Printing menu list....34
Printer status utility
Windows 2000....151
Windows Me/98/95....205
Windows NT 4.0....268
Windows XP....91
Printing
Booklets....181
Custom page sizes....172
Duplex....178
PrintSuperVision....380
Proof and print
Windows 2000....187
Windows Me/98/95....241
Windows NT 4.0....299
Windows XP....128
Protective sheet removal....17

R

Rendering intents
Windows 2000....164
Windows Me/98/95....220
Windows NT 4.0....280
Windows XP....104
Resolution
Windows 2000....177
Windows Me/98/95....230
Windows NT 4.0....290
Windows XP....118

S

Secure print
Windows NT 4.0....302
Secure printing
Windows 2000....190
Windows Me/98/95....245
Windows XP....131
Setting up
Power cable....30
Protective sheet removal....17
Toner cartridge installation....21
Shutdown menu....44
Status messages....309
Status utility
Windows 2000....151
Windows Me/98/95....205
Windows NT 4.0....268
Windows XP....91
Store to hard disk
Windows 2000....193
Windows Me/98/95....248
Windows NT 4.0....305
Windows XP....134
System adjust menu....64
System configuration menu....50

T

Test print menu....44
Toner cartridge....333
Toner cartridge installation21, 333
Transfer belt....342
Transporting....351
Troubleshooting
Miscellaneous problems....328

U

Unpacking....12
Usage menu....66
USB
menu....61
User menu settings....43

Using ICC Profiles feature
Windows Me/98/95 223
Windows XP.....106
Windows2000.....166
Utilities
color swatch.....375
LPR.....385
network printer status 382
pdf direct print 378
PrintSuperVision.....380

W

Watermarks
Windows 2000.....184
Windows Me/98/95 235
Windows NT 4.0.....296
Windows XP.....125
Windows ICM color matching
Windows 2000.....169
Windows Me/98/95 222
Windows XP.....109