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1

Introduction

In This Chapter...

- About this manual
- Typographic conventions

Introduction

This manual provides information you may need only once in a while. Use it in conjunction with your other QMS 1660 Print System documentation.

This chapter gives you a brief overview of this manual.

About This Manual

The information in this manual is divided into the following sections:

1 Introduction	Provides an overview of the manual.
2 Print Media	Lists print media sizes, margins, and imageable areas and provides media storage information.
3 Professional Printing	Discusses typographic terms, displays the printer's typefaces, and provides some page design tips.
4 Printer Configuration	Explains the methods of configuring the printer, demonstrates how to use printer control panel, and provides a complete discussion of the configuration menu.
5 Additional Technical Information	Discusses printer-host communication, memory terms and configuration, end job mode, IEEE 1284 bidirectional parallel interface modes, PS Protocol, HP-GL color encoding, and PCMCIA card slots.

6 Printer Options

Describes how to install and use additional paper cassettes, a paper feeder, and a paper cassette supporter; font, emulation, and security cards; memory upgrades (SIMMs); an Intellifont font SIMM; 1200x1200 dpi resolution daughterboard; LocalTalk and network interfaces; an IDE-SCSI hard disk drive board, an internal IDE hard disk, an internal Kanji font IDE hard disk, and external SCSI hard disks.

A QMS Customer Support

Provides world-wide product sales and support telephone numbers and describes how to communicate with QMS through the QMS Bulletin Board, CompuServe, the Internet and Q-FAX.

B Technical Specifications

Provides technical specifications for the printer and lists available supplies and replacement parts.

C Document Option Commands

Lists printer-supported Document Option Commands (DOCs), provides updated HP PCL 5 terminology, and discusses updated DOCs.

D Notices

Lists manual and legal notices.

E Configuration Menu

Displays the printer configuration menu in tree form.

Glossary

Defines commonly used terms.

Index

Typographic Conventions

The following conventions are used throughout this manual:

Mixed-Case Courier	Text you type, and messages and information displayed on the screen
<i>Mixed-Case</i> <i>Italic</i> Courier	Variable text you type; replace the italicized word(s) with information specific to your printer or computer
UPPERCASE COURIER	Information displayed in the printer message window
lowercase bold	PostScript operators and DOS commands
<i>lowercase italic</i>	Variable information in text and PostScript variables
UPPERCASE	File and utility names
↵	Press the Enter key (PC) or Return key (Macintosh)
^	Press and hold down the Ctrl key (PC)

- » **Note:** *Notes contain tips, extra information, or important information that deserves emphasis or reiteration.*

▲ **Caution:** *Cautions present information that you need to know to avoid equipment damage, process failure, or extreme annoyance.*

⚠ **WARNING!** *Warnings indicate the possibility of personal injury if a specific procedure is not performed exactly as described in the manual.*

ACHTUNG! *Bitte halten Sie sich exakt an die im Handbuch beschriebene Vorgehensweise, da sonst Verletzungsgefahr bestehen könnte.*



2

Print Media

In This Chapter . . .

- Media sizes, margins, and imageable areas
- Media storage

Introduction

This chapter lists the media sizes and imageable areas supported by the QMS 1660 Print System, and then provides information on selecting and storing media.

Media Sizes, Imageable Areas, and Margins

Your printer supports media in a number of sizes.

-
- ▲ **Caution:** *The media size must match the cassette size. Since the cassette sends a size signal to the printer controller, using the wrong size media will cause your image to be positioned incorrectly on the page or clipped. You may purchase additional cassettes from your QMS vendor.*
-

Imageable Area

Each media size has a certain imageable area, the maximum area on which the printer can print. This area is subject to both hardware limits (the physical media size and the margins required by the printer) and software constraints (the amount of memory available for the full-page frame buffer).

Media Sizes, Imageable Areas, and Margins

The following table lists the size, imageable area, and feed edge (the edge of the media drawn into the printer first) of all supported media:

Media	Media Size		Imageable Area		Feed Edge
	Inches	Millimeters	Inches	Millimeters	
11x17	11.00x17.00	279.40x431.80	10.69x16.66	271.61x432.17	Short
12x19	11.70x19.50	297.18x495.30	11.37x19.16	288.80x486.66	Short
A3	11.69x16.54	296.93x420.12	11.38x16.20	289.22x411.48	Short
A4	8.27x11.69	210.06x296.93	7.92x11.38	201.38x289.22	Long
A5	5.83x8.27	148.09x210.06	5.48x7.96	139.32x202.18	Long
A6/Postcard	4.13x5.85	104.90x148.59	3.82x5.50	97.19x139.82	Short
B4	10.12x14.32	257.05x363.73	9.81x13.98	249.26x355.09	Short
B5	7.16x10.12	181.86x257.05	6.82x9.81	173.23x249.26	Long
B6	5.06x7.17	128.52x182.12	4.74x6.82	120.56x173.35	Short
Executive	7.25x10.50	184.15x266.70	6.94x10.16	176.44x258.06	Short
Full Ledger	11.70x17.40	297.18x441.96	11.37x17.16	288.80x435.86	Short
Legal	8.50x14.00	215.90x355.60	8.18x13.66	207.94x346.96	Short
Letter	8.50x11.00	215.90x279.40	8.16x10.69	207.26x271.61	Long
Universal	11.70x17.00	297.18x431.80	11.38x16.66	287.02x429.26	Short

Working Within the Imageable Area

The imageable areas for print media on your QMS 1660 Print System are not centered vertically on their respective pages and may vary $\frac{1}{16}$ " (1.6 mm). You can align the image in several different ways:

- Adjust the margins or page size through your application.
- Use the printer's control panel (Administration/Engine/Image Alignment menu).
- Use the PS Executive Series Utilities. See the on-line help for instructions.
- Use the PostScript **translate** and **scale** operators to reduce image size and change its placement on the page.

Page Margins

Margins are set through your application. Some applications allow you to set custom page sizes and margins while others have only standard page sizes and margins from which to choose. If you choose a standard format, you may lose part of your image (due to imageable area constraints). If you can custom-size your page, use exactly those sizes given for the imageable area.

Media Types and Weights

Your printer supports labels, paper, postcards, and transparencies in a number of sizes. Although the printer is not specifically designed for envelope printing, you may want to test print a standard envelope to see if the print quality is suitable for your needs. See “Envelopes: Special Considerations” in chapter 2, “Consumables,” of the *Operation* manual for more information on printing envelopes.

Labels

Type

Use only labels recommended for laser printers, such as Avery 5260. Adhesive label stock has pressure-sensitive (peel-and-stick) adhesive backing.

Weight

The printer supports 17-34 lb (64-128 g/m²) labels in the multipurpose tray.

Paper

Type

Use only paper recommended for laser printers, such as Hammermill Laser Print. Thicker paper, such as Xerox 4024 (28 lb [105 g/m²]), is also acceptable in the multipurpose tray.

- » **Note:** *We recommend that you do not print on perforated or 3-hole punched paper.*

Weight

The printer supports the following weights of paper:

- **Multipurpose tray**—17-34 lb (64-128 g/m²)
- **Paper cassettes**—17-24 lb (64-90 g/m²)

Postcards

Weight

The printer supports 17-34 lb (64-128 g/m²) postcards in the multipurpose tray.

Transparencies

Type

Use only transparencies recommended for laser printers, such as Canon brand type D and 3M type PP2500.

Weight

The printer supports 17-34 lb (64-128 g/m²) transparencies in the multipurpose tray.

Media Storage

Improperly stored media increases the chance of paper jams during printing and can drastically affect the print quality of the printed page. Keep media in good condition by storing it

- In its wrapper
- On a flat surface
- In a closed cabinet
- In a cool, dry area



3

Professional Printing

In This Chapter . . .

- About typefaces and fonts
- Typography terms
- Typeface classification
- Resident typefaces, fonts, and symbol sets

Introduction

This chapter defines common terms used in the description of fonts and typefaces, and displays the printer's resident typefaces.

About Typefaces and Fonts

Many of the terms and phrases used in desktop publishing are derived from the language of professional printers and typesetters. This section explains common words and phrases used when discussing typefaces.

<p style="text-align: center;">Typeface</p> <p>A named design of a set of printed characters, such as Times, that has a specified obliqueness (degree of slant) and stroke weight (thickness of stroke). It does not define a particular size.</p>	<p style="text-align: center;">Typeface Family</p> <p>A group of similar typefaces. For example, the Times typeface family consists of four typefaces: Times Roman, Times Bold, <i>Times Italic</i>, and Times Bold Italic.</p>
<p style="text-align: center;">Font</p> <p>A set of characters of the same typeface (such as Times), style (such as <i>italic</i>), stroke weight (such as bold), and point size (such as 10). Although you hear the term "font" used more generally, as if referring to a typeface, it's really a subset of a typeface.</p>	<p style="text-align: center;">Character Set</p> <p>A collection of symbols designed for various printing applications. Many character sets are composed of the letters (uppercase and lowercase A-Z), digits (0-9), and any symbol (such as blank space, dollar sign, and ampersand). Other character sets are composed entirely of symbols.</p>

Typeface Classification

One way of classifying the different typefaces is to group them into the following categories:

Serif

A serif is a decorative line or tail on the ends of the strokes of a letter. Serifs, usually on the lower half of a letter, have also been

Times Roman referred to as feet or curlicues.
Courier, ITC Bookman, New
Century Schoolbook, Palatino,

and Times are serif typefaces. In the example shown, all the letters except “e” and “o” have serifs.

Sans Serif

Sans serif (“sans” is French for “without”) indicates a typeface without any of these small tails. A

Helvetica

sans serif typeface is decorative by the shape and styling of its letters but has less detail than a serif typeface. Helvetica, Helvetica Condensed, Helvetica Narrow, and ITC Avant Garde Gothic are all sans serif typefaces. In the example shown above, the slight curving at the bottom of the letters “t” and “a” is not a serif. It is part of the line forming the letter rather than a decorative line added on.

Script

Script typefaces simulate handwriting or brush lettering. Each letter is connected visually, if not

Zapf Chancery physically. ITC Zapf Chancery is a script typeface.

About Typefaces and Fonts

Pi or Symbol

Pi or symbol typefaces are collections of assorted special-purpose characters (for example, decorative, graphic, math, or monetary characters). They are especially useful for highlighting items in lists, providing graphics, and displaying symbols that might otherwise have to be drawn in by hand. Many typefaces today include a complement of the more commonly used pi characters. Symbol and ITC Zapf Dingbats are pi typefaces.



Typography Terms

Monospacing

The terms “monospaced” and “fixed-pitch” refer to a typeface whose characters all have uniform and equal spacing. These typefaces are useful for spreadsheets and other documents with columnar data. Monospacing is the opposite of proportional spacing.

Proportional Spacing

The term “proportionally spaced” refers to a typeface in which the width of each character varies. For example, the letter “i” is thinner than the letter “m” and therefore takes up less space. Proportional spacing saves page space and is easier on the eye. This manual’s text uses the Helvetica font, a proportionally spaced typeface.



Because proportionally spaced typefaces place each character according to its individual size, they increase legibility and readability.

This example shows the difference between a monospaced typeface (Courier) and a typeface (Times).

Bitmapped Font

A bitmapped font is one in which each character is represented by a set of dot patterns. Each font size requires a different set of dot patterns.

Dots

Scalable Font

A scalable font is one in which each character's dot pattern (bitmap) is generated from a mathematical representation (or outline) of the character. Scalable fonts eliminate the need to store many different font sizes.



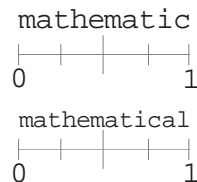
Point Size

Point size refers to the height of a proportionally spaced typeface. A point is a unit of measure equal to $1/72$ ". Therefore, the larger the point size, the larger the letter. The following example shows characters in 8, 10, 12, 24, and 36 point sizes:

A B C D E

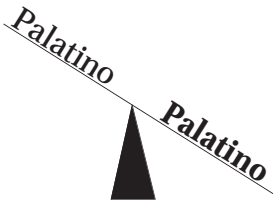
Pitch

Pitch refers to the number of characters per horizontal inch (cpi) in a monospaced typeface. Therefore, the larger the pitch, the smaller the letter. For example, a ten-pitch typeface prints ten characters per inch (or 10 cpi) while a twelve-pitch typeface prints twelve characters per inch (or 12 cpi). The example shows ten-pitch and twelve-pitch Courier.



**About
Typefaces and
Fonts**

Stroke Weight



Stroke weight (light/medium/bold) is the width (thickness), of the lines (strokes) that make up a character. The example at left shows the medium and bold weights of Palatino.

Italic and Oblique Forms

Italic was originally developed in the early sixteenth century as a typeface based on cursive handwriting. Today's italics are still individually crafted typefaces designed to blend with a specific roman (upright) typeface.

Times Roman
Times Italic

ITC Avant Garde Roman Oblique (or slanted) type forms, however, are not individually but are mechanically slanted versions of the roman form from which they derive.

ITC Avant Garde Oblique

Orientation

Orientation is the direction of the print or image on a page. Portrait orientation reads from left to right, across the narrower dimension of the page. Landscape orientation also reads from left to right but places the print across the wider dimension of the page. Spreadsheet and table applications commonly use landscape printing. Both terms

Resident Fonts, Typefaces, and Symbol Sets

Serif Fonts

ITC Bookman Light
ITC Bookman Light Italic
ITC Bookman Demibold
ITC Bookman Demibold Italic

Palatino Roman
Palatino Italic
Palatino Bold
Palatino Bold Italic

New Century Schoolbook Roman
New Century Schoolbook Italic
New Century Schoolbook Bold
New Century Schoolbook Bold Italic

Times Roman
Times Italic
Times Bold
Times Bold Italic

Courier
Courier Oblique
Courier Bold
Courier Bold Oblique

Sans Serif Fonts

ITC Avant Garde Gothic Book
ITC Avant Garde Gothic Book Oblique
ITC Avant Garde Gothic Demibold
ITC Avant Garde Gothic Demibold Oblique

Helvetica Condensed
Helvetica Condensed Oblique
Helvetica Condensed Bold
Helvetica Condensed Bold Oblique

Helvetica
Helvetica Oblique
Helvetica Bold
Helvetica Bold Oblique

Helvetica Narrow
Helvetica Narrow Oblique
Helvetica Narrow Bold
Helvetica Narrow Bold Oblique

Script Font

ITC Zapf Chancery Medium Italic

Pi or Symbol Fonts

Σψμβολ (Symbol)

☪■▣▤▥◆♦ (ITC Zapf Dingbats)

Resident HP PCL Fonts

Your printer has the following resident HP PCL fonts. All fonts can be automatically rotated to landscape orientation. Some are fixed in pitch and point size while others are scalable. Unless otherwise noted, samples are show in 10 point size.

Serif Fonts

Courier 12 pitch 10 point	Courier 10 pitch 12
<i>Courier 12 pitch 10 point</i>	point
<i>Italic</i>	<i>Courier 10 pitch 12</i>
Courier 12 pitch 10 point	<i>point Italic</i>
Bold	Courier 10 pitch 12
	point Bold

Times (scalable)
Times Italic (scalable)
Times Bold (scalable)
Times Italic Bold (scalable)

Sans Serif Fonts

Line Printer 16.66 pitch
8.5 point

Univers (scalable)	Univers Condensed (scalable)
<i>Univers Italic (scalable)</i>	<i>Univers Condensed Italic (scalable)</i>
Univers Bold (scalable)	Univers Condensed Bold (scalable)
<i>Univers Italic Bold (scalable)</i>	<i>Univers Condensed Italic Bold (scalable)</i>

Pi or Symbol Font

☞ ☞ ■ ♪ ∫ ∞ ◆ ♦ (ITC Zapf Dingbats)

Optional Fonts

Resident HP-GL Symbol Sets

Your printer has the following resident HP-GL symbol sets. All come in both fixed- and variable-spaced versions, and all are scalable.

9825 Character Set	ISO Portuguese
ANSI ASCII	ISO Spanish
French/German	ISO Swedish
ISO French	ISO Swedish For Names
ISO German	ISO United Kingdom
ISO IRV (International Reference Version)	JIS ASCII
ISO Italian	Katakana
ISO Norway, Version 1	Roman Extensions
ISO Norway, Version 2	Scandinavian
	Spanish/Latin American
	Special Symbols

Optional Fonts

Your printer supports the following optional fonts:

- **Downloadable fonts**—Include Type 1 and Type 3 host-resident and printer-card-resident downloadable fonts and Type 42 (PostScript format) downloadable TrueType fonts. TrueType fonts in HP PCL format are not supported.
- **Optional Intellifont SIMM**—Increases the number of PCL 5 fonts from 20 to 37. See chapter 6, “Printer Options,” for more information.
- **Optional Kanji internal IDE hard disk**—Provides 6 Kanji fonts. See chapter 6, “Printer Options,” for more information.



4

Printer Configuration

In This Chapter...

- Methods of printer configuration
- Using the printer control panel
- Using the printer configuration menu

Introduction

This chapter begins by listing and describing the different ways you can configure your printer to meet your special printing needs.

The next section describes how to use the printer control panel to access the configuration menu and how to make configuration changes.

The rest of the chapter provides basic printer configuration information about all configuration menu options. Menu options discussed in this chapter are grouped according to task. After each option is introduced, a table lists the option's location in the configuration menu, the available choices for that option, and the factory default (the value set at the factory).

Methods of Configuration

You have four major ways to configure your printer to meet your printing needs. In order of priority, they are

- Through an application
- Through PS Executive Series Utilities
- Through printer commands
- Through the printer control panel
- Through a remote console (for network users)

Using an Application

Using your application is the best way to control your printer since most printing is done on a per-job basis. This helps prevent confusion in network environments and saves you from making changes at the printer control panel. Your application documentation explains how to control your printer settings: probably by choosing options from a printing menu.

Applications use printer drivers to send the appropriate commands automatically to the printer for the requested tasks. If your application doesn't have a QMS 1660 Print System driver, you can select a comparable PostScript driver, such as another QMS driver or a Laser-Writer driver. However, comparable drivers may not allow you to access all of your printer's features, such as 1200x600 dpi printing or collating.

Using PS Executive Series Utilities

You can also use the PS Executive Series Utilities (shipped with your printer) to control the printer from your host. See the README file on the utilities disk for information on installing the utilities, and see the utilities on-line documentation for details on using the software.

Using Printer Commands

QMS Document Option Commands (DOC)

Your printer provides a powerful feature that can accommodate your specific print job requirement (and the requirements of any other user on the network) without affecting the printer configuration for other print jobs. This feature is the set of QMS Document Option Commands (DOC).

With DOC, you can add commands to the beginning of your files that, when interpreted by the printer, turn on specific file processing or document handling features. For example, you can use DOC to specify an emulation, select a specific inputbin or media size, choose page orientation, and more. The features you select and the DOC you use take effect only for the current print job. After your job prints, the DOC added to the beginning of the next file take effect. If no DOC appears on the next file, the printer's default values resume. Appendix C in this manual lists all DOC your printer supports. For more information, refer to the *QMS Crown Document Option Commands* manual, available from your QMS vendor.

Configuration Menu

Language Commands

PostScript operators and HP PCL and HP-GL commands can enable job-specific features your application or page description language can't access. Refer to your language documentation for specifics.

Using the Control Panel

Your printer is configured at the factory for the most typical printing environments, so most users don't have to use the control panel often. However, if you do need to change a printer setting for all print jobs (not just on a per-job basis), you can do so through the control panel. If you are working in a shared printing environment, your system administrator should be the only person to make changes through the printer's control panel.

The rest of this chapter explains how to use the printer control panel and configuration menu.

Using a Remote Console

Many of the configuration choices that can be made at the control panel can also be made through a remote console if you're connected to a network via an optional network interface. To avoid confusion in a shared printing environment, only the system administrator should make configuration changes.

- » **Note:** *If a remote console has the printer off line, pressing the Online/Offline key will not take effect until the console puts the printer back on line.*

Configuration Menu

The printer's configuration menu allows you change the default printer configuration settings. In other words, changes you make affect all subsequent print jobs.

The options in the configuration menu are organized under three main menus:

■ Administration Menu

Use this menu to maintain printer-host communication information, and for selecting and configuring printer emulations, configuring special pages, printing engine calibration, and configuring hard disks (if installed).

■ Installation Menu

Use this menu to establish passwords for the Operator Control and Administration menus. This menu displays only when an optional security card is installed.

■ Operator Control Menu

Use this menu to maintain document processing options (number of copies, media type, and paper orientation). These capabilities are usually handled most efficiently within specific print jobs since each job has its own requirements. However, if there is no way of specifying these options within a job, you may do so from the control panel.

Accessing the Configuration Menu

To access the configuration menu, make sure the printer is idle (`IDLE` displays in the message window), then press the Online/Offline key to take the printer off line (the Online/Offline indicator is not lighted), and finally press the Menu key.

Example

The following table shows how to use the control panel keys to access the printer configuration menu. Press the control panel keys in the order shown. The printer responds by displaying a status message or configuration menu in the message window.

Configuration Menu

- » **Note:** You may need to press the Next key more than one time to advance through the list of options.

Press this key...	to...	The message window reads...
Online/Offline	Turn off the Online/Offline indicator and ready the printer for configuration.	IDLE
Menu	Access the configuration menu.	CONFIGURATION OPERATOR CONTROL

The printer must be off line and idle before you can access the configuration menu.

Selecting Configuration Menu Options

Once you access the configuration menu, you use the control panel keys to move through the menu. Use the following keys:

Press this key...	to...
Next	Advance to the next option or submenu within a menu.
Previous	Return to the previous option or submenu within a menu.
Select	Select an option or enter a submenu.

Example

To change the default printer emulation from ESP to PostScript, press the control panel keys in the order shown in the following table.

- » **Note:** You may need to press the Next key more than once to advance through the list of selections or options.

Press this key...	to...	The message window reads...
Online/Offline	Turn off the Online/Offline indicator and ready the printer for configuration.	IDLE
Menu	Access the configuration menu.	CONFIGURATION OPERATOR CONTROL
Next	Advance to the Operator Control/ Administration menu.	CONFIGURATION ADMINISTRATION

Configuration Menu

Select	Access the Administration menu	ADMINISTRATION COMMUNICATIONS
Select	Access the Communications menu.	COMMUNICATIONS TIMEOUTS
Next	Advance to the Communications/Parallel menu.	COMMUNICATIONS PARALLEL
Select	Access the Parallel menu.	PARALLEL MODE
Next	Advance to the Parallel/Emulation menu.	PARALLEL EMULATION
Select	Access the Emulation menu.	EMULATION ESP
Previous	Advance to the Emulation/PostScript menu.	EMULATION POSTSCRIPT
Select	Select PostScript as the default emulation.	POSTSCRIPT IS SELECTED
	After 3 seconds you are returned to the Parallel/Emulation menu.	PARALLEL EMULATION

Changing Character Information

Sometimes, rather than selecting an option, you need to enter character information. A character is any letter, digit, or symbol. A field is a group of characters that have meaning. Use the printer control panel to enter character information in the message window during printer configuration. The maximum length of the message window is 16 characters.

Entering character information through the control panel is similar to setting the time and date on a digital watch. You enter one character at a time. The current input character flashes. Use the following keys to change the current input character:

Press this key..	to...
Next	Advance to the next choice for the current input character.
Previous	Return to the previous choice for the current input character.

Configuration Menu

Once you have changed the current input character, use the following keys to move the cursor to another input character:

Press this key...	to...
Select	Advance the cursor to the next character.
Menu	Return the cursor to the previous character.

To exit from the character selection process, move the cursor to the last character of the input field (the character farthest to the right) and press the Select key, or move to the first character of the input field (the character farthest to the left) and press the Menu key.

When you exit, the printer verifies the character information and confirms it in the message window. If the character information is valid, you are returned to the previous menu; if it is invalid, you are returned to the input field. Press the Menu key to cancel any changes to the character information.

If the current character information is longer than the value that you need to enter, replace each extra character with a space. The printer interprets a space at the end of character information as a blank.

Example

To change the HP-GL emulation scaling percent, press the control panel keys in the order shown in the following table. The printer responds by displaying a status message or configuration menu in the message window. An underline indicates the current input character in the message window.

- » **Note:** *You may need to press the Next key more than one time to advance through the list of selections or options.*

Press this key...	to...	The message window reads...
Online/ Offline	Turn off the Online/Offline indicator and readies the printer for configuration.	IDLE
Menu	Access the configuration menu.	CONFIGURATION OPERATOR CONTROL
Next	Advance to the Administration menu.	CONFIGURATION ADMINISTRATION

Configuration Menu

Select	Access the Administration menu	ADMINISTRATION COMMUNICATIONS
Next	Advance to the Communications/ Emulation menu.	COMMUNICATIONS EMULATIONS
Select	Access the Emulations menu.	EMULATIONS ESP DEFAULT EMUL
Next	Advance to the Emulations/HP-GL menu.	EMULATIONS HP-GL
Select	Access the HP-GL menu.	HP-GL PLOTTER
Next	Advance to the HP-GL/Scaling Percent menu.	HP-GL SCALING PERCENT
Select	Access the Scaling Percent menu.	SCALING PERCENT <u>100</u>
Previous	Lower the current character to 0.	SCALING PERCENT <u>0</u> 00
Select	Select 0 and move the current character to the next 0.	SCALING PERCENT <u>0</u> 00
Next (4 times)	Advance the current character to 5.	SCALING PERCENT <u>0</u> 50
Select	Select 5 and move the current character to the last 0.	SCALING PERCENT 0 <u>5</u> 0
Select	Select 50 as the default scaling percent.	50 IS SELECTED
	After 3 seconds you are returned to the HP-GL/Scaling Percent menu.	HP-GL SCALING PERCENT

Saving Configuration Changes

Before the printer can accept print jobs with configuration changes, the changes must be saved.

Configuration Menu

Example

To save your configuration changes, press the control panel keys in the order shown in the following table. The printer responds by displaying a status message in the message window.

Press this key...	to...	The message window reads...
Online/Offline or Menu	Exit from the menu (Online/Offline) or return to the previous menu (Menu). You are prompted to save your change(s).	SAVE CHANGES? NO
Next	Advance to the Save Changes?/Yes option.	SAVE CHANGES? YES
Select	Select Yes. The printer finishes printing any print jobs in process, saves your change, and returns to idle.	IDLE
Online/Offline	Turn on the Online/Offline indicator and ready the printer to accept and print jobs.	IDLE

- » **Note:** *The printer may need to be restarted before certain changes to the Administration menu take effect. Some changes restart the printer automatically while others display the message `REBOOT NOW?` in the control panel message window. If this message appears, select `YES` to restart the printer and have the change(s) take effect immediately, or select `NO` to wait until you manually restart the printer for the change(s) to take effect.*

Canceling Configuration Changes

If you change a configuration option and then decide to cancel that change, you can do so when exiting from the configuration menu.

Example

To cancel your configuration changes, press the control panel keys in the order shown in the following table. The printer responds by displaying a status message in the message window.

Press this key...	to...	The message window reads...
Online/ Offline or Menu	Exit from the menu (Online/Offline) or return to the previous menu (Menu) and be prompted to save your change.	SAVE CHANGES? NO
Select	Select No. The printer finishes printing any print jobs in process, does not save your changes, and returns to idle.	IDLE
Online/ Offline	Turn on the Online/Offline indicator and ready the printer to accept print jobs.	IDLE

Setting the Message Window Language

Status messages and configuration menus can be displayed in the message window in English, French, German, or Spanish. If you need to change the message window language, use the Keypad Language option in the Administration/Miscellaneous menu.

Menu	Administration/Miscellaneous/Keypad Language
Choices	English, French, German, Spanish
Default	English
Notes	The printer must be restarted for changes to the Keypad Language menu to take effect. You can either let the printer restart automatically after you save the change and exit from the configuration menu, or you can wait for the change to take effect the next time you manually turn on the printer.

Restoring the Factory Default Configuration

If you need to cancel all of the configuration changes you have made, you can reset all of the configuration settings to their factory defaults.

Menu	Administration/Miscellaneous/Restore Defaults
Choices	Yes, No

Configuration Menu Options

Default	No
Notes	This process takes several minutes to complete.

Configuration Menu Options

The rest of this chapter describes the options in the printer configuration menu. Information is organized in the following order:

- Collation
- Copies
- Emulations
- Hard disks
- Interfaces
- Media input
- Media orientation
- Media output
- Media size
- Memory
- Optional features
- Passwords
- Printer engine
- Printer start-up options
- Special pages
- Timeouts

Collation

Collation is the printing of multiple copies of a document in numeric order. The QMS 1660 Print System is collation capable. It can deliver multiple copies of your files in collated or uncollated order to the output tray.

Menu	Operator Control/Collation
Choices	On—Enable collation. Off—Disable collation.
Default	On

If not enough memory is available, chunk collation occurs. Chunk collation breaks a print job into several smaller collation sequences, which must be manually combined to create a single, collated document.

See chapter 3, “Advanced Printing Features,” in the *Operation* manual for more information on collation and on improving collation performance on your printer.

Copies

While it is usually preferable to select in your application the number of copies you want to print, you can change the default number of copies for all print jobs through the printer control panel.

Menu	Operator Control/Copies
Choices	001-999
Default	001
Notes	Sets the default number of copies for all subsequent print jobs.

Emulations

Use the Administration/Emulations menu to set the parameters for the available printer emulations. Optional printing emulations appear only if installed.

- » **Note:** *To choose an emulation or ESP for a particular interface, use the appropriate interface menu in the Administration/Communications menu. See “Interfaces,” later in this chapter, for more information.*

Setting ESP Default Parameters

ESP (Emulation Sensing Processor) technology analyzes incoming file data and selects the appropriate printer emulation from those installed on the printer. The ESP Default Emul option allows you to set the emulation used when ESP is unable to identify the language of a print job. For more information on ESP, see chapter 5, “Additional Technical Information.”

Menu	Administration/Emulations/ESP Default Emul
Choices	HPGL, Lineprinter, PCL5, PostScript
Default	PCL5
Notes	You must turn the printer off and back on again for the change to take effect.

Setting HP-GL Parameters

Enhanced Mode

Increases the resolution of a downloaded character.

Menu	Administration/Emulations/HPGL/Enhanced Mode
Choices	On—Standard resolution for fixed- and variable-spaced fonts, 4x8 grid Off—Enhanced resolution for variable-spaced fonts, 26x36 grid
Default	Off

Expand Mode

Defines a larger imageable area for the selected media type. This increased imageable area affects the default placement of the scaling points P1 and P2.

Menu	Administration/Emulations/HPGL/Expand Mode
Choices	On—Turn on expand mode. Off—Use default scaling points, plotting range, and plotting area.
Default	Off

Origin

Sets the image offset from the plotter's origin in 0.01" increments.

Menu	Administration/Emulations/HPGL/Origin/X Direction
Choices	0000-8500 (0"-8.5")
Default	0000

Menu	Administration/Emulations/HPGL/Origin/Y Direction
Choices	00000-11000 (0"-11.0")
Default	00000

Paper Type

Identifies the original image's paper size.

Menu	Administration/Emulations/HPGL/Paper Type
Choices	A (letter/8.5"x11.0"), A3 (297x420 mm), A4 (210x297 mm), B (11.0"x17.0"), Scale to Paper
Default	Scale to Paper

Emulations

Pen 1 - Pen 8

Sets the width and color for the eight plotter pens. A width and a color option are available for each pen.

- » **Note:** See chapter 5, "Additional Technical Information," for more information on the HP-GL emulation color encoding equation.

Menu	Administration/Emulations/HPGL/Pen x/Width
Choices	00-60 (0.1-6.0 mm)—see Notes below
Default	Pen 1—7 (0.7 mm) Pen 2—3 (0.3 mm) Pen 3—3 (0.3 mm) Pen 4—3 (0.3 mm) Pen 5—3 (0.3 mm) Pen 6—3 (0.3 mm) Pen 7—3 (0.3 mm) Pen 8—3 (0.3 mm)
Notes	A pen width of 00 defaults to 0.1 mm.

Menu	Administration/Emulations/HPGL/Pen x/Color
Choices	Black, Blue, Brown, Cyan, Gray - 25%, Gray - 50%, Gray - 75%, Green, Magenta, Orange, Red, Violet, Yellow
Default	Pen 1—Black (100% black) Pen 2—Black (100% black) Pen 3—Red (70% black) Pen 4—Green (41% black) Pen 5—Blue (89% black) Pen 6—Violet (59% black) Pen 7—Orange (25.8% black) Pen 8—Brown (50% black)
Notes	Cyan=30% black, magenta=59% black, and yellow=11% black.

