



QMS[®] 1660E Print System Getting Started



1800382-001B

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Dear Customer,

Mark Twain once said that only two things in life are certain: death and taxes. Well, if he were living today, we're sure he'd add manuals to this list. Just about everything you buy is accompanied by a manual—and your new QMS printer is no exception.

Now, we know that even though we've devoted our lives to writing manuals, very few people actually enjoy reading them. So we've written this user's guide with you in mind. However, there are as many of you out there as there are printers, and you all need something different. Because of this, we've tried to design your user's guide to help you reach your destination as quickly and easily as possible:

- **Table of Contents**—Use this section as a road map to discover what there is to see in the user's guide.
- **About the Documentation**—This section functions as a Welcome Center. It gives you an idea about what's in this city (your guide to getting started) as well as in other nearby cities (other printer documentation).
- **About This Manual**—As long as you're at the Welcome Center, you probably want a list of local attractions. This section lets you know which chapters you really shouldn't miss and which you need to visit only if you have the time and interest, or a special purpose. It's pretty much the same information as in the table of contents, but in a descriptive format.
- **Headers, Footers, and Tab Dividers**—Use these as road signs to help you locate the section of the manual you want to visit.
- **Index**—While some people like to wander through a city, stopping wherever they find something interesting, others like to call ahead to make a reservation for a specific hotel or restaurant. Our Blue Pages help you find information quickly without unnecessary detours. Easy on, easy off. We think you'll find the blue color especially useful since you'll have more than one manual in the binder.

We hope you enjoy your new QMS printer (and traveling through its manuals, too!)

Your QMS Technical Writer

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B Configuration Menu

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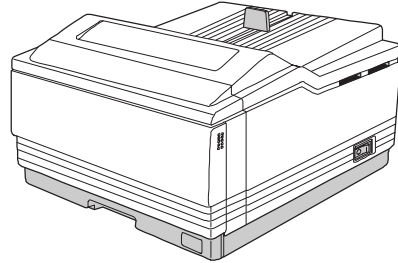
Introduction

In This Chapter . . .

- About the printer
- About the documentation
- About this manual
- Printer features and user benefits

About the Printer

The QMS 1660E Print System offers the unique QMS Crown multitasking operating system, superior performance, extensive connectivity, upgrade options, and flexible emulation support.



It prints 16 letter/A4-size pages per minute; uses media up to 11.70"x19.50"/297.18x495.30 mm in size; and offers 300x300, 600x600, and either 1200x600 or 1200x1200 dpi (dots-per-inch) resolution.

About the Documentation


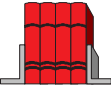

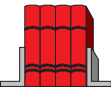
The documentation provides a window into the many capabilities of your printer. The more familiar you are with the documentation, the easier it'll be for you to achieve the results you want from your printer.

Several pieces of standard documentation accompany your printer. If you've ordered any printer options, you'll have even more documentation. But don't worry—you don't have to read them all tonight to be able to use your printer. In fact, some of them you may never have to refer to at all, depending on the type of documents you print and the environment in which you print them.

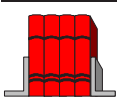
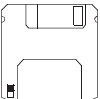
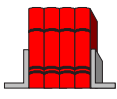
This section will give you an idea of how we've organized information and which documents you'll probably refer to the most.

Standard Product Documentation

The following documentation is shipped with your printer:

	<i>QMS 1660E Print System Getting Started</i>	You're looking at this manual right now. It contains detailed, illustrated instructions to guide you as you unpack and set up your printer and connect it to an IBM or compatible PC and/or an Ethernet network. In addition, it introduces you to the printer's control panel. The "About This Manual" section later in this chapter details the contents of this manual.
	<i>QMS 1660E Print System Operation</i>	This manual guides you through the day-to-day operation of your printer. It includes information on replacing print media and toner, using advanced printing features, handling and cleaning your printer, improving print quality, and troubleshooting printer problems.
	<i>QMS 1660E Print System Reference</i>	This manual provides information you may need only once in a while, such as information on typefaces and fonts, control panel configuration menu, memory, end job mode, the PS protocol option, HP-GL color encoding, and installing and using printer options. This manual also provides technical specifications, a list of printer-supported QMS Document Option Commands (DOC), and a glossary of frequently used terms.
	<i>QMS CrownNet Interface System Administrator's Guide</i>	This manual guides you through configuring the printer's Ethernet (CrownNet) interface, using the software (CrownAdmin for Macintosh, DOS, and Windows and CrownNet Manager for OS/2), and using the UNIX utilities.

About the Documentation

 <p>QMS Crown Remote Console User's Guide</p>	<p>This manual describes how to use the Remote Console software to access printer information and change printer configuration settings from anywhere on the network.</p>
 <p>QMS Crown Network Notes</p> <p>» Note: <i>This manual is provided on disk in encapsulated PostScript (EPS) form. Refer to the README file for information on printing a hard copy of the manual.</i></p>	<p>Refer to this manual for tips on using your QMS 1660E Print System if you're connecting to a network through the serial or parallel port.</p> <p>It discusses 3Com 3+Open, Banyan VINES, LAN Manager-based LANs, Novell NetWare, TCP/IP, UNIX, and VMS/DECnet. In most cases, only advanced network users and system administrators need this information.</p>
 <p>Printer Option Documentation</p>	<p>If you purchased a printer option (for example, a network interface or a Kanji option kit), you received separate documentation for it. See chapter 6, "Printer Options," of the <i>QMS 1660E Print System Reference</i> for additional option information.</p>

Optional Documentation

The following manual, available from your QMS vendor, may also be useful::



QMS Crown Document Option Commands

Document Option Commands (DOCs) are software codes you insert in documents to enable printer features that cannot be accessed by your application or page description language. This manual lists and explains all of the DOC commands. The DOCs supported by your printer are listed in appendix D, "Document Option Commands," of the *QMS 1660E Print System Reference*.

In most cases, only advanced users and system administrators need this information.

Related Documentation

Don't forget that your application, host operating system, and network documentation all contain useful printing information.

About This Manual

This manual provides detailed information on how to set up your QMS 1660E Print System and how to use the control panel. It is divided into the following sections:

1 Introduction

Provides an overview of the documentation, this manual, and the printer's features.

2 Setting Up Your Printer

Guides you in selecting a location for your printer and explains how to unpack and set up your printer.

3 Connecting to a PC

Explains how to connect the printer to an IBM or compatible PC via the parallel and serial ports.

4 Connecting to an Ethernet Network

Explains how to connect the printer to a network via the Ethernet (CrownNet) port, install the software, and configure both the interface and the network.

5 Using the Control Panel

Introduces the parts of the printer control panel.

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 Configuration Menu

Displays the printer configuration menu in tree form.

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Typographic Conventions

The following typographic conventions are used in this manual:

Mixed-Case Courier	Text you type, and messages and information displayed on the screen
Mixed-Case Italic 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
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.*

Printer Features

This brief overview will acquaint you with your printer's major features and how they can benefit you. Specific chapters throughout this manual, the operation manual, and the reference manual contain more information on each feature. Consult the index or the table of contents in each manual for guidance in locating this information.

Media Flexibility

The printer supports print media in 14 different sizes—11"x17"/279.40x431.80, full ledger (full-bleed 11"x17" on 11.70"x17.40"/297.18x441.96 mm media), 11.7"x19.5"/297.18x495.30 mm, A3, A4, A5, A6 (postcard), B4, B5, B6, executive, legal, letter, and universal)—and in both portrait and landscape orientations. The multipurpose tray also supports custom print media in

Printer Features

sizes ranging from 3.9" to 11.7" (101 mm to 297 mm) wide and from 5.8" to 19.5" (147 mm to 495 mm) long.

User Benefit—You have the option of printing on a variety of standard and non-standard media sizes, including full ledger (11.70x17.40/297.18x441.96 mm) and 11.70"x19.5"/297.18x495.30 mm, which provide full-bleed 11"x17"/279.40 x 431.80 mm images in both portrait and landscape orientations and with enough additional imageable area to accommodate crop marks outside the 11"x17" area.

Multiple Resolutions

The printer supports three print resolutions: 300x300, 600x600, and, depending on whether a 1200x1200 dpi daughterboard is installed, either 1200x600 or 1200x1200 dpi (dots per inch).

- » **Note:** *Printing at 600x600, 1200x600, and 1200x1200 dpi resolution on certain media sizes requires additional memory. See the "High-Resolution Printing" section in chapter 3, "Advanced Printing Features," of the Operation manual for details. See chapter 6, "Printer Options," of the Reference manual for more information on the 1200x1200 dpi daughterboard.*

User Benefit—Three different resolutions allow you to customize the quality of your output according to its use: 300x300 dpi for most hardcopy needs, 600x600 dpi for good camera-ready output, and 1200x600 or 1200x1200 dpi for better camera-ready output and enhanced gray scales (depending on your application).

Toner Savings

The Conserve Toner option allows you to increase the life of the printer's toner cartridge. Using the printer's control panel or Remote Console, you can turn Conserve Toner on or off for all print jobs. However, with PS Executive Series Utilities, you can set Conserve Toner on a per-job basis.

User Benefit—A choice of printing modes allows you to lower printing costs by reducing the amount of toner on the printed page when you're printing draft copies of documents.

Three Standard Interfaces

In addition to the Centronics/IEEE 1284 parallel and serial interfaces, your printer provides a standard Ethernet (CrownNet) network interface that allows you to connect to EtherTalk, LAN Manager/LAN Server, NetWare, and TCP/IP networks. Optional LocalTalk and Token-Ring network interfaces, as well as a second Ethernet network interface, are also available.

User Benefit—You can connect a computer directly to the printer's parallel and serial ports or use the Ethernet port to connect to a wide variety of microcomputers, workstations, minicomputers, and main-frame computers on four different networks.

Four Resident Emulations

Your printer supports printing in HP PCL 5, HP-GL, Lineprinter, and PostScript emulations.

User Benefit—Most applications can print directly to the printer.

HP PCL 5 Emulation

The printer simultaneously emulates a Hewlett-Packard LaserJet III Si and an HP PaintJet XL300 Color Printer (the output is gray-scaled on your QMS 1660E) at both 300x300 dpi (bitmap and scalable fonts) and 600x600 dpi (scalable fonts only). Only 300x300 dpi resolution is available for HP-GL/2.

- » **Note:** *Using 600x600 dpi resolution with certain media sizes may require additional memory. See the "High-Resolution Printing" section in chapter 3, "Advanced Printing Features," of the Reference for details.*

HP-GL Emulation

The printer provides HP-GL plotter emulation (7470A, 7475A, 7550A, and ColorPro) at 300x300, 600x600, 1200x600, and 1200x1200 dpi.

Printer Features

- » **Note:** *Using 600x600, 1200x600, or 1200x1200 resolution with certain media sizes may require additional memory. See the “High-Resolution Printing” section in chapter 3, “Advanced Printing Features,” of the Reference for details.*

Lineprinter Emulation

The Lineprinter emulation prints simple, unformatted text files at 300x300 and 600x600 dpi. Each text line ends with a carriage return.

- » **Note:** *Using 600x600 dpi resolution with certain media sizes may require additional memory. See the “High-Resolution Printing” section in chapter 3, “Advanced Printing Features,” of the Reference for details.*

PostScript Level 2 Emulation and Level 1 Compatibility

The QMS 1660E Print System’s Level 2 emulation allows you to take full advantage of your printer's high print resolution (up to 1200x1200 dpi). The Level 2 emulation is compatible with Adobe's PostScript Level 2 language while providing additional capabilities. QMS Level 2 supports extensive graphics capabilities to control the appearance of text, geometric shapes and images, and improves memory and resource management. Full support for PostScript Level 1 files is also included.

- » **Note:** *Printing at 600x600, 1200x600, and 1200x1200 dpi resolution on certain media sizes requires additional memory. See the “High-Resolution Printing” section in chapter 3, “Advanced Printing Features,” of the Reference for details.*

Resident Fonts and Symbol Sets

Your printer comes with 12 PostScript typeface families containing 39 licensed fonts, and it provides TrueType font support (in PostScript emulation only). All resident PostScript typeface families have multilingual character sets. The printer also has 7 resident bitmap HP PCL fonts in 25 symbol sets each, 12 resident scalable HP PCL fonts in 35 symbol sets each, 1 resident scalable HP PCL font in 5 symbol sets, and 40 resident HP-GL symbol sets.

User Benefit—With so many resident fonts and symbol sets, there is less need for time-consuming downloading.

QMS Crown Technology

The QMS Crown multitasking operating system provides fast processing speeds, networking capability, and higher printer performance while maintaining outstanding print quality.

Compile-Ahead Technology and True Multitasking

Compile-ahead technology keeps all of the QMS 1660E's printing resources busy to improve throughput. While the engine is printing a page, compile-ahead technology uses available printer memory to prepare the subsequent pages of the document (or the next job). With pages ready in memory, the engine continues printing as soon as it deposits printed pages in the output tray. In other words, compiling, rasterizing, and printing all work independently but simultaneously.

User Benefit—Because print job processing time is significantly reduced, the host is free sooner and you spend less time waiting for your documents to print.

Simultaneous Interface Operation (SIO)

Although many other printers have multiple interface ports and automatically designate a "hot port," only one port actively receives data at a time. Your QMS 1660E Print System is unique because SIO allows all of its interface ports—Centronics/IEEE 1284 parallel, serial, Ethernet, and an optional LocalTalk, Ethernet, or Token-Ring interface—to be active at the same time.

User Benefit—You can have more than one computer printing to the printer. Each interface has an input buffer (which may be expanded with additional memory) that receives data while another interface is being used to print.

Emulation Sensing Processor (ESP) Technology

Most printers can recognize only their native command language. However, using a form of artificial intelligence, ESP technology ana-

Printer Features

lyzes incoming file data from any of the printer's interfaces, selects the appropriate emulation from those installed on the printer, and processes the print job.

User Benefit—When your printer is in ESP mode, you can easily print PostScript, HP PCL 5, HP-GL, and Lineprinter documents without changing printer switch settings or sending software commands to accommodate different printer languages.

Context Switching

After its initial use, the state of an emulation and downloaded data (such as fonts, macros, and overlays) is preserved for as long as the printer power is on.

User Benefit—Repetitive downloading of emulations, fonts, macros, and overlays is unnecessary.

Compressed Data Formats

Crown printers convert data received from the input buffers into intermediate, compressed blocks until the data is needed for printing. These compressed blocks of data are designed to be processed rapidly by the printer, and many more can be stored in memory at one time than can traditional bitmapped images.

User Benefit—This allows and increases the speed of such printer features as collation and automatic jam recovery.

Automatic Jam Recovery

Crown technology also provides automatic jam recovery. With most printers, when a media jam occurs, you must remove the jammed media and then reprint the job. If jam recovery is enabled on a Crown printer, once you remove the jammed media, the printer reprints the jammed page and then continues with the print job. This is possible because compressed data formats allow more pages to be stored in memory. The printer remembers the last page printed, pulls the necessary information from memory, and automatically reprints any lost pages.

User Benefit—You save time and print media because it's unnecessary to resend a print job after clearing a media jam.

Energy Star Compliance

The QMS 1660E Print System is compliant with US Environmental Protection Agency (EPA) Energy Star regulations. After a specified period of inactivity, the printer changes to a low-power state (the engine remains on, but the fuser turns off). When a print job is received, the printer returns to normal power within 90 seconds.



User Benefit—The EPA Energy Star Computers program promotes the use of energy-efficient personal computers, monitors, and printers and the reduction of air pollution caused by power generation.

Software Loadable System (SLS)

Your printer has a software loadable system, which allows you to replace or upgrade its system software from a Macintosh or a PC, or over an Ethernet or Token-Ring network. Future enhancements to the system software can be easily installed as they become available from QMS.

Remote Console

The Ethernet (CrownNet) network interface and its accompanying software allow your QMS 1660E to establish a remote console connection via EtherTalk, LAN Manager/LAN Server, Novell NetWare, and TCP/IP. Printer status that requires user intervention is displayed on the remote console. For example, a status message may indicate that paper is low, the output bin is full, or a media jam has occurred. The *QMS CrownNet Interface System Administrator's Manual* explains how to begin a remote console session, and the *QMS Crown Remote Console User's Guide* explains how to use a remote console to control and configure the printer.

Printer Features

User Benefit—The ability to control your printer from a remote console as well as from the printer's own control panel means you don't have to leave your workstation every time the printer needs attention. Moreover, you'll know right away if the printer is tied up with a media jam or other simple problem requiring user intervention.

PCMCIA Card Slots

The two PCMCIA (Personal Computer Memory Card International Association) card slots on the right side of the printer under the output tray support PCMCIA Release 1.0 Type I and Type II cards. The right slot also supports Release 2.0 Type I and Type II cards.

User Benefit—Both slots support font and security cards (see the following section, "Printer Options," for details).

Printer Options

The following options are available for your QMS 1660E Print System. Contact your QMS vendor for purchase information.

Upgradable RAM (Random Access Memory)

The QMS 1660 Print System comes in three configurations:

- 12 MB of RAM
- 24 MB of RAM
- 48 MB of RAM and 1200x1200 dpi daughterboard

However, you can upgrade this RAM to 64 MB through the installation of SIMMs (single in-line memory modules). Additional RAM allows you to print at higher resolutions on certain media sizes, download and cache fonts, and attach and use multiple hard disks. Additional RAM also increases the printer's buffer (the area where data sent from the host computer is stored), allowing you to send large data-intensive files to the printer without tying up the host for long periods.

- » **Note:** *SIMM specifications are included in Q-FAX document 6502, "QMS-tested SIMMs and Hard Disks." This document contains a description of each approved SIMM, its manufacturers and part numbers, and the QMS products on which it's used. See appendix A, "QMS Customer Support," of this manual to find out how to access Q-FAX documents.*

User Benefit—Your printer's memory can be upgraded as your needs grow.

- » **Note:** *Printing at 600x600, 1200x600, and 1200x1200 dpi resolution on certain media sizes requires additional memory. See the "High-Resolution Printing" section in chapter 3, "Advanced Printing Features," of the Reference for details.*

1200x1200 dpi Daughterboard

If your printer didn't ship with a 1200x1200 dpi daughterboard installed, you can purchase one.

User Benefit—You can upgrade your printer's capabilities as your print resolution requirements change. 1200x1200 dpi provides better camera-ready output than either 600x600 or 1200x600 dpi and enhanced gray scales (depending on your application).

- » **Note:** *Printing at 600x600, 1200x600, and 1200x1200 dpi resolution on certain media sizes requires additional memory. See the "High-Resolution Printing" section in chapter 3, "Advanced Printing Features," of the Reference for details.*

250-Sheet and 500-Sheet Paper Cassettes

This option increases the printer's paper feed capacity. While your printer comes standard with two 250-sheet paper cassettes (letter/A4 and 11" x 17"/A3), you can install only one paper cassette at a time in the printer. However, an optional paper feeder allows you to install dual paper cassettes, increasing paper feed capacity to 600 sheets (including the multipurpose tray). Attaching an optional cassette supporter to the paper feeder allows you to install a 500-sheet paper cassette, increasing paper feed capacity to 850 sheets (including the multipurpose tray).

Printer Features

User Benefit—You can customize the printer's media input sources to your printing needs.

Fonts

Optional fonts are available in three different formats:

- The HP ProCollection fonts and special PostScript fonts are either contained on font cards or must be downloaded to an optional printer hard disk. Font cards can be inserted in either of the two card slots.
- An Intellifont SIMM increases the number of fonts available to the HP PCL 5 emulation from 20 to the 37 PCL 5 fonts available on an HP LaserJet 4Si.
- A pre-formatted IDE hard disk provides the Kanji fonts Ryumin Light-KL and Gothic BBB Medium (both licensed to QMS by Morisawa and Company, Ltd.) as well as the fonts Mincho Medium, Mincho Heavy, Gothic Bold, and Gothic Heavy (licensed to QMS by TypeBank). These fonts can be printed at a variety of point sizes and in different styles and resolutions.

Contact your QMS vendor for a complete list of available fonts.

User Benefit—Optional fonts increase the printer's functionality and allow you to create more distinctive documents.

Emulations

Optional emulations, such as LN03 and QUIC II, are contained on floppy disks and must be downloaded to an optional printer hard disk.

Contact your QMS vendor for a complete list of available emulations.

User Benefit—Extra emulations allow you to print documents created in printer languages other than those resident on the printer.

Security Card

An optional security card allows you to password-protect the printer's configuration menu. The card can be inserted in either PCMCIA (Personal Computer Memory Card International Association) card slot.

User Benefit—A security card restricts access to the configuration menu to those users with valid passwords, thus ensuring that default settings are not changed inappropriately.

LocalTalk Interface

An optional LocalTalk interface card provides direct connection to a single Macintosh or to an AppleTalk network.

User Benefit—Any Macintosh not on an Ethernet (EtherTalk) network can be connected directly to the printer.

CrownNet Network Interface

Using a CrownNet NIC (network interface card), the QMS 1660E Print System can be attached to a Token-Ring network or to a second Ethernet network.

User Benefit—Network interfaces provide flexibility and fast data transfer in complex network environments.

Hard Disk Expandability

An optional internal IDE-SCSI disk drive board supports an internal 2.5" IDE hard disk and up to three external SCSI hard disks.

- » **Note:** *Q-FAX document 6502, "QMS-tested SIMMs and Hard Disks," contains a description of each approved hard disk, its manufacturers and part numbers, and the QMS products on which it's used. See appendix A, "QMS Customer Support," of this manual to find out how to access Q-FAX documents.*

User Benefit—Hard disks provide true virtual memory as well as storage for character bitmaps, downloaded outline fonts, and other files.

Paper Output Ramp

The paper output ramp extends the QMS 1660E's output tray to accommodate 11.7" x 19.5"/297.18 x 495.30 mm media.

User Benefit—Extra-large-size media lies flat in the output tray.

What's Next?

Chapter 2, "Setting Up Your Printer," explains how to find a good location for the printer, unpack the printer, install a toner cartridge, and load and install a 250-sheet paper cassette.



2

Setting Up Your Printer

In This Chapter . . .

- Finding a good location for the printer
- Unpacking the printer
- Installing a toner cartridge
- Loading and installing a 250-sheet paper cassette
- Connecting the power cord
- Printing a start-up page

Introduction

This chapter explains how to set up your QMS 1660E Print System for the first time.

It includes information on finding a good location for the printer, unpacking it and checking the shipment contents, installing a toner cartridge and paper cassette, and printing a start-up page.

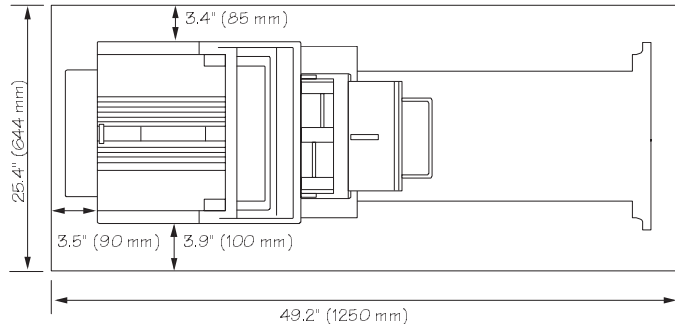
Finding a Good Location

Your QMS 1660E Print System operates in almost any computing environment. However, when selecting your printer's location, use the following guidelines.

Location Requirements

- Away from cooling sources, heating sources, extreme temperature changes, direct sunlight, excessive dust, and corrosive chemicals or vapors.
- Away from any strong electromagnetic field (such as that created by an air conditioner) and excessive vibration.
- Temperature range of 50° F (10° C) to 90° F (32.5°C).
- Relative humidity range of 20% to 80%.
- Level (with less than 2° slope) and capable of supporting the printer weight, which is about 50 lbs (23 kg) for the printer only.
- An appropriate distance from the host computer, based on your operating environment—6 feet (1.8 meters) or less for parallel connection or 25 feet (7.5 meters) or less for a serial connection.
- Well ventilated. Leave space on each side of the printer for adequate ventilation.
- Enough space to hold the four printer legs and to allow you to open the front cover, access the multipurpose tray, and slide out

the paper cassette. In other words, with the 11" x 17"/A3 paper cassette installed, you need an area at least 25.4"/664 mm x 49.2"/1250 mm.



Power Requirements

Your printer requires a properly grounded AC outlet with a power range of $\pm 10\%$ of the rated voltage (100, 110/120, or 220/240 V). Noise-generating equipment should not be connected to the same electrical outlet as the printer. The recommended frequency is 50 Hz ± 2 Hz for 100 and 220/240 V systems and 60 Hz ± 2 Hz for 110/120 V systems.

-
- ▲ **Caution:** *The supplied power cord is equipped with a 3-wire grounding plug for safety purposes. Use the proper grounding-type power outlet.*
-

Energy Star Compliance

The printer is compliant with US Environmental Protection Agency (EPA) Energy Star regulations. After a specified period of inactivity, the printer changes to a low-power state (the engine remains on, but the fuser turns off). When a print job is received, the printer returns to normal power within 90 seconds.

Checking Shipment Contents

In addition to this manual, your shipment consists of the following items. As you unpack the printer in the next section, make sure that all of these items are included in your shipment before setting up your printer. If any items are missing or damaged, contact your shipping company or your QMS vendor. See appendix A, "QMS Customer Support," for world-wide product sales and support information.

- QMS 1660E Print System
 - 250-sheet ledger or A3 paper cassette
 - 250-sheet letter or A4 paper cassette
 - Paper cassette rear cover
 - Power cord
 - Warranty and registration card
 - Toner cartridge
 - Documentation
 - *QMS 1660E Print System Operation*
 - *QMS 1660E Print System Reference*
 - *QMS CrownNet Interface System Administrator's Guide*
 - *QMS Crown Remote Console User's Guide*
 - *QMS Crown Network Notes (on disk)*
 - Documentation binder
 - PS Executive Series Utilities software (on disk)
- » **Note:** *Interface cables aren't included in the shipment. If you need cables, contact your QMS vendor or a local computer store. Chapters 3, "Connecting to a PC," and 4, "Connecting to an Ethernet Network," of this manual specify the type of cable you need.*

Registering the Printer

QMS is committed to developing print systems that offer you flexible, efficient solutions, so we're interested in knowing how you plan to use your printer. Register it now, and we'll send you a special gift.

To register by mail, fill out and send in your warranty card. To register by telephone, in the US call QMS toll-free at (800) 637-8049. In other countries, refer to appendix A, "QMS Customer Support," for the appropriate telephone number.

Unpacking the Printer

The packing materials that protect your printer during shipment—cardboard, polystyrene, tape, and shipping spacers—must be removed before you can use the printer.

Use the following procedure to unpack the printer. To ensure that your printer was not damaged during shipment, follow the entire procedure, including printing the start-up page.

- » **Note:** *You may want to save the packing materials in case you ever have to move or ship the printer to a new location.*

- ▲ **Caution:** *You may damage the printer if you turn it on before all of the packing materials are removed.*

- ⚠ **WARNING!** *The printer weighs about 50 lbs (23 kg). Don't lift it by yourself.*

ACHTUNG! *Der Drucker wiegt ca 23 kg; bitte versuchen Sie niemals, das Gerät alleine anzuheben oder zu tragen.*

- 1 **Remove everything except the printer from the shipping carton.**

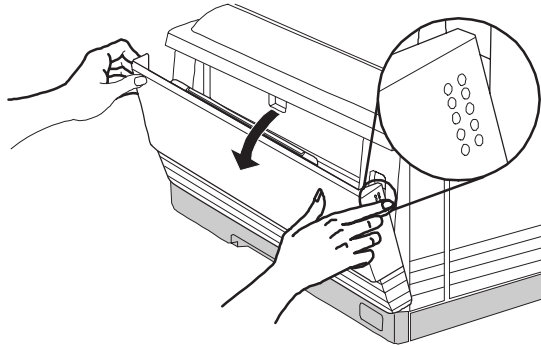
Unpacking the Printer

2 Lift the printer out of the shipping carton.

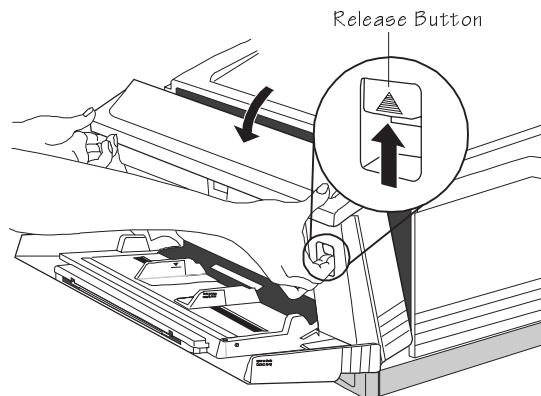
The printer is heavy, so two people should lift it. Hold the printer by the carrying grips located on the printer bottom.

3 Remove the protective plastic covering and tape from the printer body.

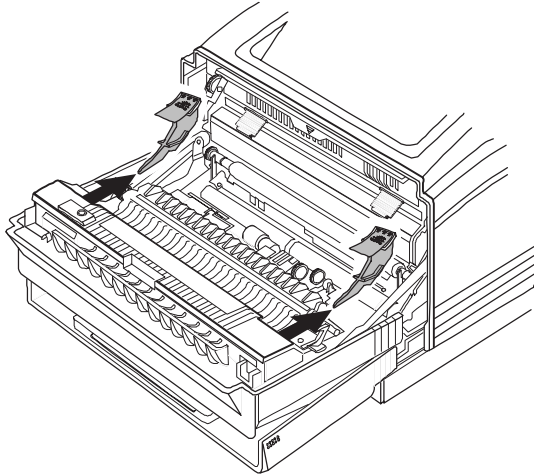
4 Using both hands, open the multipurpose tray.



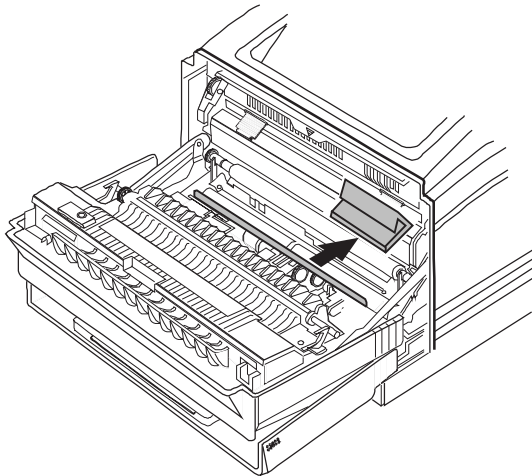
5 Open the printer's front cover.



- 6 Remove the two orange shipping spacers from inside the printer.**



- 7 Remove the piece of cardboard that holds the paper lift plate in place.**



Installing Consumables

You must install the toner cartridge, load and install a paper cassette, connect the power cord, and print the start-up page before you can install any options.

Installing the Toner Cartridge

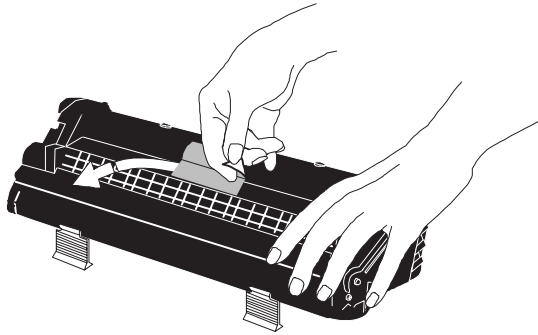
Characters and images are created in your laser printer through a process that applies toner (made of carbon particles) to the page in the printer's fusing unit. When an image is formed, heat and pressure from the printer are applied to transfer the image to the page. The toner cartridge contains the toner and the photosensitive drum needed to operate the laser printer. You may purchase additional toner cartridges from your QMS vendor.

- » **Note:** *The toner cartridge is sensitive to bright light. Do not remove the cartridge from its protective bag until you are ready to install it. Keep the toner cartridge away from your computer. The magnets in the cartridge can damage data, particularly on your floppy disks.*

- 1 Lift the toner cartridge out of its shipping carton, open the aluminum protective bag, and remove the cartridge.**

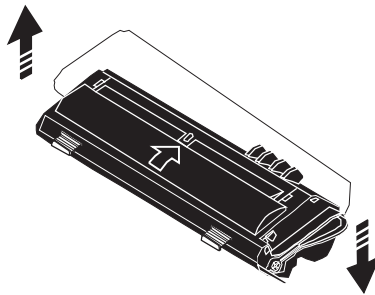
2 Remove the black protective sheet, and discard it.

Place the cartridge on a stable, flat surface to get a good grip on the protective sheet tab.



3 Distribute the toner in the cartridge.

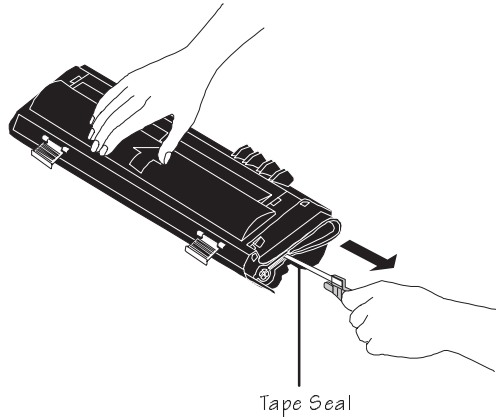
Hold the cartridge with both hands, and gently rock it from side-to-side five or six times to distribute the toner.



Installing Consumables

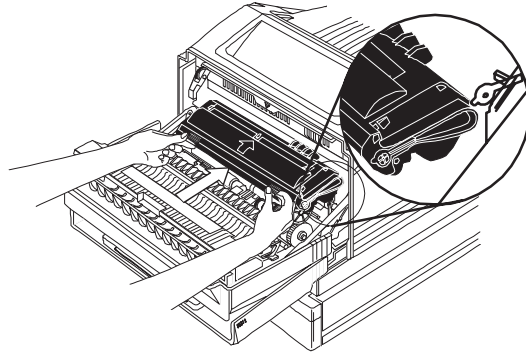
4 Remove the tape seal.

Holding the cartridge in place with one hand, use your other hand to grasp the orange tab on the right side of the tape seal. Pull the orange tab (26.4"/670 mm) straight out, and then discard both the orange tab and the tape seal.



5 Slide the toner cartridge into the printer.

Grasp the green tabs on the toner cartridge and place the cartridge on the rails inside the printer. Then lift the green tabs slightly, and slide the cartridge straight back into the printer until it is firmly seated.



6 Close the front cover, and then close the multipurpose tray.

- » **Note:** *When a toner cartridge is installed, keep the printer's front cover closed unless you need access to the inside of the printer. When the front cover is open, the protective shutters of the cartridge's photosensitive drum open, and the drum surface is exposed to light. This may deteriorate the drum and reduce print quality.*

Loading the 250-Sheet Paper Cassette

The QMS 1660E Print System comes standard with two 250-sheet paper cassettes (letter/A4 and ledger/A3). Load paper in either 250-sheet cassette as follows.

- » **Note:** *Paper must be loaded only in the appropriate cassette (for example, letter and A4 paper must be loaded only in the letter/A4 cassette). When the cassette is inserted into the printer, it sends a paper size signal to the printer software.*

Installing Consumables

- 1 Remove the packing materials from inside the two paper cassettes.**

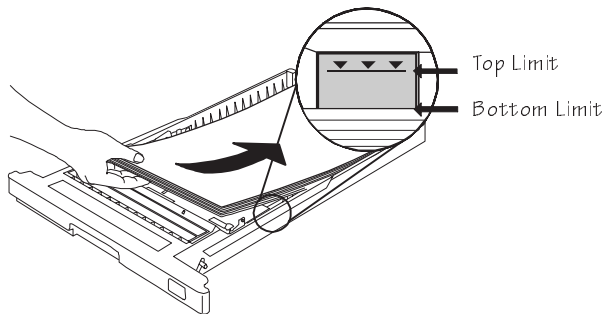
One paper cassette is already installed in the printer.

- 2 Align a stack of paper on a flat surface.**

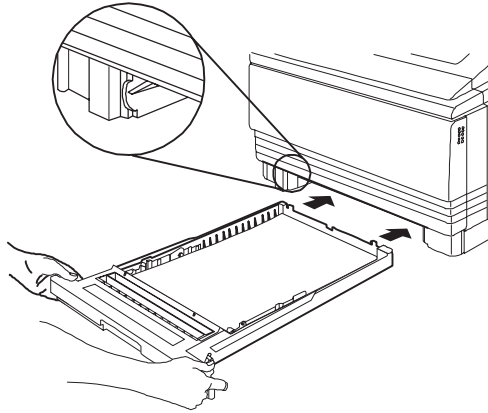
The cassette holds about 250 sheets of 20 pound (75 g/m²) paper.

- 3 Insert the paper into the appropriate cassette.**

Make sure the paper lies flat, does not exceed the top limit mark, and rests under the retaining clips.

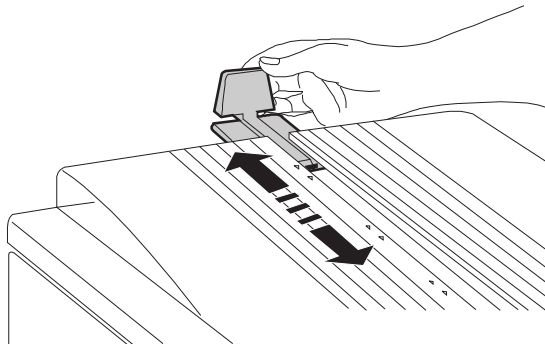


- 4 Slide the cassette into the cassette slot until it's firmly seated.**



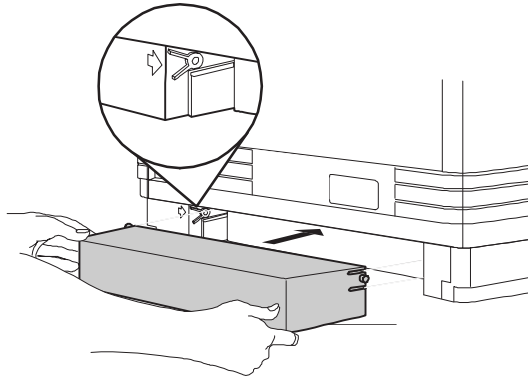
- 5 Adjust the media stop to fit the paper size.**

The printer delivers your output, print-side down, to the output tray at the top of the printer. The media stop keeps the sheets positioned in the output tray.



Installing Consumables

- 6 If you're using either a ledger /A3 or an optional legal/B4 media cassette, place the cassette rear cover on the end of the cassette at the rear of the printer.

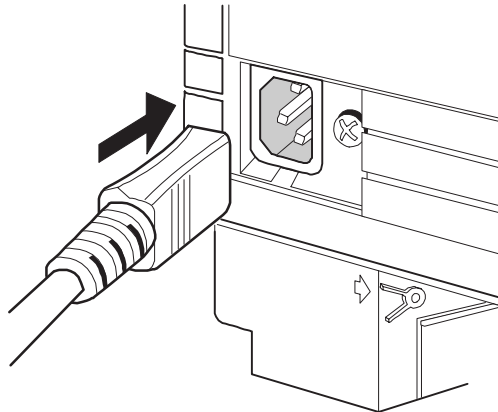


Connecting the Power Cord

The power cord connector is located at the rear of the printer. The power switch is located at the lower right of the printer.

-
- ▲ **Caution:** *Make sure that the printer power switch is turned off (the O is pressed down).*
-

- 1 Plug the power cord into the connector on the rear of the printer.**



- 2 Connect the opposite end of the power cord to a grounded AC outlet.**
- 3 Turn on the printer (press down the | side of the switch).**

After a brief warm-up (2 minutes maximum) the printer produces a start-up page.

Printing a Start-up Page


When you turn on the printer, a start-up page prints. This page gives you an overview of your QMS 1660E Print System.

The following information prints on the start-up page:

- Printer product name
- Cumulative number of printed sheets
- Amount of resident RAM (in bytes)
- Number of PostScript typefaces in ROM
- Default resolution
- Software version, revision, and release numbers
- Firmware level number
- Address and status (on or off line) of attached hard disk(s), if any
- Emulation and protocol information for all standard and optional interfaces

If the start-up page prints with all the start-up page information, and the print quality is good, go to chapter 3, "Connecting to a PC," or chapter 4, "Connecting to an Ethernet Network."

Otherwise, see chapter 6, "Troubleshooting," of the *Operation* for more information on printing a start-up page.

 **WARNING!** *Turn the printer off and unplug the power cord before checking for correct printer installation.*

ACHTUNG! *Schalten Sie bitte den Drucker aus und ziehen Sie auch den Netzstecker heraus, bevor Sie die korrekte Installation des Druckers überprüfen.*

Enabling/Disabling the Start-up Page

A start-up page automatically prints when you turn on your print system. You can save time, paper, and toner by disabling the start-up page. However, you may need the information included on the start-up page after you have disabled the page (for example, to provide to QMS Customer Technical Assurance).

You can disable (and enable) the start-up page in two different ways:

- 1 Use the PS Executive Series Utilities. See the PS Executive Series Utilities on-line documentation for complete information.
- 2 Use the printer control panel (Administration/Startup Options/Do Start Page menu). See “Enabling/Disabling the Start-up Page” in chapter 4, “Printer Configuration,” of the *Reference* for complete information.

Installing Options

If you purchased any printer options, such as extra memory (SIMMs) or a hard disk, you can install them now. If installation instructions are included with the option, follow them. If not, installation instructions are included in chapter 6, “Printer Options,” of the *Reference*.

What’s Next?

Now that you’ve set up your printer, go to chapter 3, “Connecting to a PC,” or chapter 4, “Connecting to an Ethernet Network,” of this manual to connect your printer to a host computer or network.

If you want to connect your printer to a single Macintosh or to an AppleTalk network, you’ll need an optional LocalTalk interface. Refer to chapter 6, “Printer Options,” in the *Reference* for connection instructions.

What's Next?

If you want to connect your printer to a Token-Ring network via an optional CrownNet network interface, use the installation instructions in chapter 6, "Printer Options, of the *Reference* manual and the connection instructions that came with the interface.



3

Connecting to a PC

In This Chapter . . .

- Connecting via the parallel port
- Connecting via the serial port
- Using PS Executive Series Utilities
- Using the QMS-developed Windows driver

Introduction

This chapter explains how to connect your printer to a PC via the parallel and serial ports and then discusses how to install the necessary PC printing software.

- » **Note:** *If you're connecting your printer to a network, see your network documentation for connection information.*

Before Making the Connection

If you have a brand-new PC, before connecting the printer you should follow the manufacturer's instructions for setting up the PC and installing (if it's not already installed) any operating system software, such as DOS and Windows.

What You Need

Interface cables are not included with your printer. If you're replacing a printer, you may already have the necessary cables. If not, contact your QMS vendor or a local computer store.

To connect your printer to a single PC, you need **one** of the following:

- A parallel cable with a 36-pin male and a 25-pin male connector.
- or
- A serial cable with either a 9- or 25-pin connector (depending on your PC's serial port) and a 9- or 25-pin null modem assembly to connect to the serial cable. Depending on the type of null modem assembly you have, you may also need a 9-to-25-pin adapter. See your cable vendor for more specific cable assembly information. (Appendix B, "Technical Specifications," of the *Reference* contains cable pinout specifications.)

Choosing a Cable

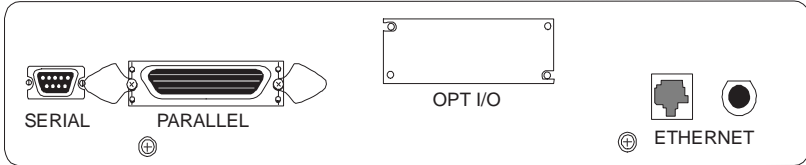
Parallel cable—If a parallel port is available on your PC, we recommend using a parallel cable. Your printer supports both Centronics parallel and IEEE 1284 bidirectional parallel communication. The type of parallel cable you use depends on the type of parallel communication your PC supports (check your PC's documentation if you're unsure).

- If your PC supports IEEE 1284 bidirectional parallel communication, you need an IEEE 1284 bidirectional parallel cable (IEEE 1284 is indicated on the cable). This cable must be 6.5 feet/2 meters or less in length.
- If your PC supports only Centronics parallel (IEEE 488) communication, you may use either an IEEE 488 parallel cable (unmarked on cable) or an IEEE 1284 bidirectional parallel cable (IEEE 1284 is indicated on the cable). However, we recommend an IEEE 1284 cable. The IEEE 1284 cable must be 6.5 feet/2 meters or less in length while the IEEE 488 cable may be longer.

Serial cable—If the printer is more than about 6.5 feet/2 meters from the PC, we recommend using a serial cable for better communication. For best results, the serial cable should be less than 25 feet/7.6 meters long.

Making the Connection

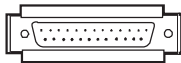
- ▲ **Caution:** *If you're connecting the printer to a single PC, turn off both systems first.*



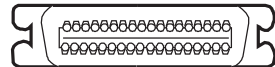
1 Attach the cable to the printer and the PC.

■ **Parallel Cable**

PC
25-pin Female Port

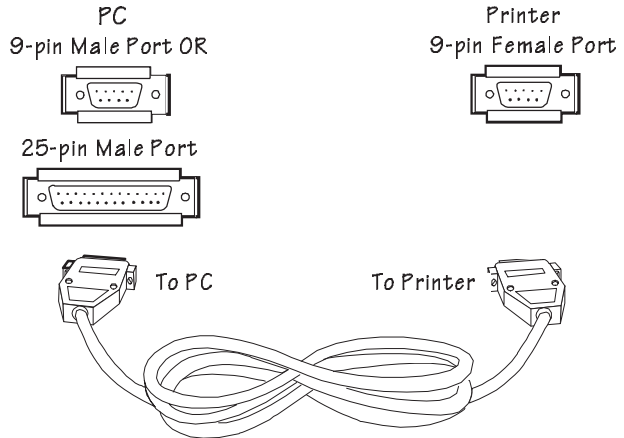


Printer
36-pin Female Port



- Connect the 36-pin end of the cable to the printer's parallel port (it's labeled "PARALLEL").
- Close the clips.
- Connect the 25-pin end of the cable to the PC's parallel port.
- Tighten the screws.

■ **Serial Cable**



- a Connect the serial cable, null modem assembly, and, if necessary, an adapter.
 - b Connect one end of the serial cable-null modem assembly to the printer's serial port (labeled "SERIAL") and the other end to the PC's serial port.
 - c Tighten the screws.
- 2 Turn on both the printer and the PC.**
- A start-up page should print. If it doesn't, see the "Printer Problem Checklist" in chapter 6, "Troubleshooting," of the *Operation* guide.
- 3 Test communication between the printer and the PC.**
- You can do this by sending a file from one of your applications, or you can refer to "Testing Communication" in chapter 6, "Troubleshooting," of the *Operation* guide.

PC Printing Software

If you're replacing a PostScript printer, you can probably start printing now with the printing software already in place. Refer to your application documentation for instructions on sending documents to the printer.

However, if you want to use all your printer's special features (like collation, 600x600 dpi and 1200x600 dpi printing, and gamma correction), **or** if you've never printed to a PostScript printer before, we recommend you take a few minutes to make sure you have the following printing software installed:

- PS Executive Series Utilities
- A PostScript printer driver
- Printer description files (if you use QuarkXPress 3.3, Aldus PageMaker, or Adobe PhotoShop)

Installing PS Executive Series Printer Utilities

The PS Executive Series Utilities (or PS Exec), included on the DOS format disks we shipped with your printer, is a utilities program for controlling the printer from your PC. For example, through PS Exec you can turn off the start-up page, rename the printer, download fonts, print font samples, and manage hard disks. Many of the procedures described in this manual involve using PS Exec. The README file on the PS Exec disk explains how to install the program, and the on-line help explains how to use it.

Installing a PostScript Printer Driver

If you're using Windows, we recommend that you install the QMS-developed Windows driver. See "Installing the QMS Windows Driver," below.

If you're using a non-Windows application, read the printing section of the application documentation for information on choosing a PostScript driver. If the application does not provide a PostScript driver, contact the application manufacturer to see if one has become

available since you bought the program. Also, PostScript drivers for some applications are available through the QMS Corporate Bulletin Board System and through CompuServe; see appendix A, "QMS Customer Support," for information.

Also, check to see if application notes (tips for printing from specific applications) are available for your application from Q-FAX, the QMS bulletin board, or CompuServe. Appendix A, "QMS Customer Support," explains how to use these QMS information services.

Installing the QMS Windows Driver

The QMS-developed Windows driver supports all the printer's features. Use the following procedure to install the driver:

- 1 With Windows running on your PC, insert the QMS "Windows Driver" disk (shipped with your printer) in the PC's 3.5" disk drive.**
- 2 Open the Windows Control Panel, and double-click the Printer's icon.**

The Control Panel icon is usually located in the Program Manager's Main window.

- 3 In the Printers dialog box, choose the Add button.**
- 4 From the List of Printers that appears, choose Install Unlisted or Updated Printer, and then choose the Install button.**
- 5 In the text box that appears, type the name of the disk drive (for example, a: \) the Windows Driver disk is in, and then choose OK.**
- 6 In the Add Unlisted or Updated Printer dialog box, select the appropriate printer:**
 - If you're using the QMS Level 2 Windows printer driver, select your printer (for example, QMS 1660E Level 2) from the list of printers, and choose OK.

- Otherwise, select QMS PostScript Printer, and choose OK.
- » **Note:** *If you see the message Insert Microsoft Windows 3.1 Disk #5 or a disk with the updated SSERIFF.FON file in..., choose Cancel.*
- 7 When QMS 1660E Level 2 appears in the list of printers, choose the Connect button to configure the printer port.**
 - 8 In the Connect dialog box, select the appropriate computer port in the Ports list, and then choose OK.**
 - 9 Choose the Setup button to configure the printer's default settings:**
 - If you're using the QMS Level 2 Windows printer driver, on the setup tabs select the appropriate default settings.
 - Otherwise, in the PostScript Printer on xxx dialog box, select your printer (for example, QMS 1660E) in the Printer drop-down list box, and select the appropriate default settings.
 - 10 Choose OK to return to the Printers dialog box.**
 - 11 Choose Set As Default Printer to make the QMS printer the default printer.**
 - 12 Repeat steps 3-10 to install the QMS driver for other ports, or choose Close to exit from the Printers dialog box.**

Now you can set printer options from your application by choosing Print Setup from the application's File menu and then choosing the Options button. Choose the Help button in any of the driver dialog boxes for information on driver options.

Printer Description Files

Printer description files for Windows applications are included on the QMS Windows Drivers disk shipped with your printer.

- **If you use Adobe PhotoShop**, for best output quality use the QMS-developed Windows driver. Then, so that choices in the QMS driver take effect, go to PhotoShop's Page Setup dialog box, and select Use Printer's Default Screen under the Screens option.

- **If you use Aldus PageMaker 5.x**, use the version 4 PPD on the QMS Windows Drivers disk. If you experience problems using the QMS driver with this application, refer to chapter 6, “Troubleshooting,” in the *Operation* guide for more information.
- **If you use QuarkXPress 3.3**, after you install the QMS driver install the QMS 1660 PDF according to the instructions in your QuarkXPress documentation.

Printing from the PC

You're now ready to print from your PC. From this point, you'll probably perform most printing tasks from your application. For specific information, check the printing section in your application documentation.

For information on print media types and sizes, see chapter 2, “Print Media,” in the *Reference* guide.

What's Next?

Now that you've connected your printer to a PC, continue with chapter 5, “Control Panel,” to learn about the printer's control panel keys, indicators, and message window.



4

Connecting to an Ethernet Network

In This Chapter . . .

- Connecting to the network
- Installing the software
- Configuring the interface
- Configuring the network

Introduction

The Ethernet port, also referred to as the QMS CrownNet network interface, is a combination of hardware and host software that allows your QMS 1660E printer to be connected to an Ethernet network that supports the following:

Operating System	Protocol
AppleTalk	EtherTalk
LAN Manager/LAN Server	NetBIOS/NetBEUI
NetWare	IPX/SPX
TCP/IP	TCP/IP

Connecting to the Ethernet port consists of four steps:

- Connecting to the network
- Installing the CrownNet software
- Configuring the interface
- Configuring the network

The rest of this chapter explains these steps in more detail.

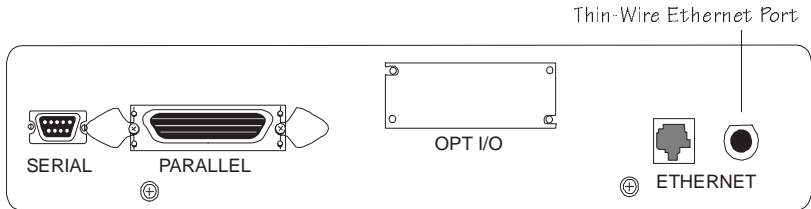
Connecting to the Network

The Ethernet port supports two types of connections:

- Thin-wire Ethernet (10Base2, BNC connector)
- Twisted-pair Ethernet (10BaseT, RJ45 connector)

Thin-Wire Ethernet

Thin-wire Ethernet connections use BNC connectors.



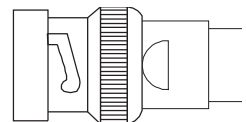
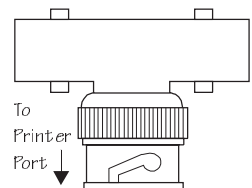
» **Note:** Unless the BNC “T” connector described in steps 1 and 2 is already installed on the thin-wire Ethernet cable, your network’s operation is disrupted during the connection process.

- 1 Turn off the printer, and unplug the power cord.
- 2 Attach one section of thin-wire Ethernet cable to one end of the BNC “T” connector.

» **Note:** If the BNC “T” connector is already installed, go to step 3.

- 3 Attach another section of thin-wire Ethernet cable or a 50 ohm terminator to the other end of the BNC “T” connector.

- 4 Attach the BNC “T” connector to the BNC Ethernet port.

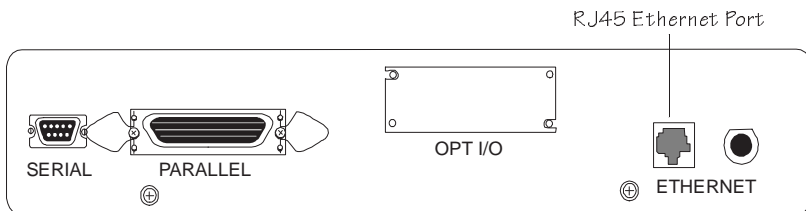


Installing the Software

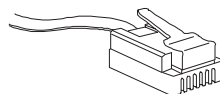
- 5 Plug in the printer, and turn it on.
- 6 Go to the next section, "Installing the Software."

Twisted-Pair Ethernet

Twisted-pair Ethernet connections use RJ45 connectors.



- 1 Turn off the printer, and unplug the power cord.
- 2 Connect one end of the twisted-pair Ethernet cable to the RJ45 Ethernet port.
- 3 Connect the other end of the cable to the 10BaseT concentrator.
- 4 Plug in the printer, and turn it on.
- 5 Go to the next section, "Installing the Software."



Installing the Software

CrownAdmin software is provided for DOS/Windows and Macintosh System, CrownNet Manager software is provided for OS/2, and UNIX host software is provided for UNIX. Use the appropriate procedure to install the software on your host.

-
- ▲ **Caution:** *We recommend that you make backup copies of the appropriate disks. Store them in a safe place; use the copies to install the software.*
-

DOS

- 1 **With the PC on, insert the CrownAdmin software for DOS disk in the disk drive.**
- 2 **At the DOS C> prompt, type**

```
x:install source destination↵
```

where *x* is the drive in which you inserted the disk, *source* is the pathname of the drive/directory containing the installation software, and *destination* is the full pathname of the directory in which the software will be installed (for example, `a:install a: c:\crownadm\`).

- » **Note:** *You can't install the utilities by copying files from the disks. You must run the installation program.*
- 3 **When the installation is complete, remove the disk from the disk drive and store it in a safe place.**
 - 4 **Go to the next section, "Configuring the Interface."**

Macintosh System

- 1 **With the Macintosh on, insert the CrownAdmin for Macintosh disk in the disk drive.**
- 2 **If necessary, double-click the Utilities disk icon to open a disk window.**
- 3 **Copy the CrownAdmin file by dragging the CrownAdmin icon from the Utilities window to the Macintosh hard disk.**
- 4 **When the installation is complete, remove the disk from the disk drive and store it in a safe place.**
- 5 **Go to the next section, "Configuring the Interface."**

Installing the Software

OS/2

This is a two-part procedure. Some of the utilities are installed on the print server and others on the workstation.

- » **Note:** *For information on installing the utilities directly on the workstation, so you can bypass the print server and print directly to the printer, see the QMS CrownNet Interface System Administrator's Manual.*

Print Server

- 1 **At the LAN Manager/LAN Server print server, log into the network as the system administrator.**
- 2 **Insert the CrownNet Manager for OS/2 disk in the disk drive.**
- 3 **Open an OS/2 window, and at the C> prompt, change to the drive in which you inserted the CrownNet Manager disk (for example, a:↵).**
- 4 **At the drive prompt type**

```
lsminst x: y:↵
```

where *x* is the drive in which you inserted the CrownNet Manager disk, and *y* is the drive on which CrownNet Manager will be installed (for example, `lsminst a: c:↵`).

- » **Note:** *If you've previously installed the CrownNet Manager, you can use `lsminst x: y: /u↵` to force installation of the upgraded software.*

The installation program creates and installs the software in a directory named `y:\CROWN`.

- » **Note:** *You can't install the utilities by copying files from the disks. You must run the installation program.*
- 5 **Remove the disk from the disk drive and store it in a safe place.**

- 6 To start the CrownNet Manager for OS/2 automatically each time the print server is turned on, add the following commands, in this order, at the end of the STARTUP.CMD file (but before any @EXIT command):**

```
set crownman=c:\crown
start c:\crown\crownman.exe -m
```

» **Note:** *The -m option minimizes the CrownNet Manager window to an icon after the program opens.*

- 7 To start the CrownNet Manager now, open an OS/2 window and type the following commands:**

```
set crownman=c:\crown↵
start c:\crown\crownman.exe↵
```

The CrownNet Manager window appears.

- 8 To install specific ports, choose Install from the CrownNet Manager window.**
- 9 In the Installation of CrownNet Ports dialog box, select the appropriate printer port(s) and choose Install.**

The selected ports are displayed in the CrownNet Manager window.

» **Note:** *Port names are either the default or those chosen in the next section, "Configuring the Interface."*

Workstation

Use this procedure to install the CrownAdmin software on the workstation. CrownAdmin lets you use Remote Console; it is not necessary for printing via OS/2.

- 1 With the workstation running, insert the disk containing the CrownAdmin software for DOS or Windows in the disk drive.**
- 2 Open a session under OS/2:**
 - **OS/2 version 1.x**—Open a DOS Window session.
 - **OS/2 version 2.x**—Open a WIN-OS/2 session.

Installing the Software

- 3 Refer to the DOS or Windows information elsewhere in this section, “Software Installation,” for further instructions.
- » **Note:** *You can't install the utilities by copying files from the disks. You must run the installation program.*
- 4 When the installation is complete, remove the disk from the disk drive and store it in a safe place.
- 5 Go to the next section, “Configuring the Interface.”

UNIX

- » **Note:** *The procedure described here is for UNIX Host Software installation from disk. If you have a cartridge or tape, refer to the installation documentation accompanying the cartridge or tape.*
- 1 Log on the UNIX system as root.
 - 2 Change to the directory in which you want the UNIX utilities installed.

The utilities automatically create and are installed in a directory named QMSOft in the current directory.
 - » **Note:** *This directory must be able to be mounted by all network nodes that need to access the printer.*
 - 3 If a PC file system (PCFS) is available on the UNIX host, mount the disk.

For information on mounting a DOS FAT-formatted disk refer to the UNIX man page.
 - 4 Transfer the HS_TAR image file to the UNIX host directory where the file is to be expanded.
 - » **Note:** *If the UNIX host doesn't support PCFS, transfer the image from a PCFS-capable device (such as a DOS system) to the UNIX system via binary FTP.*
 - 5 In the directory in which the image file is located, expand the tar image file by typing

```
tar xvf hs_tar
```

- 6 Change to the newly created QMSoft directory:**

```
cd QMSoft↓
```

- 7 Run the Qinstall installation utility by typing**

```
./Qinstall↓
```

- 8 Follow the instructions on the screen. When the installation is complete, the following message displays:**

```
QMS UNIX Host Software installation complete
```

- 9 Copy the addprt and qpr utilities and their associated manual pages to standard directories. For example,**

```
cp addprt /usr/bin↓  
cp qpr /usr/bin↓  
cp man/addprt.1 /usr/man/man1↓  
cp man/qpr.1 /usr/man/man1↓
```

- 10 If you're using SNMP to manage your network using SunNet Manager, copy the appropriate files to the SunNet Manager agents directory.**

See your SunNet Manager documentation for more information.

- 11 Update the printer's Internet name and address in the /etc/hosts file.**

- 12 Run the QMS addprt utility by typing**

```
addprt↓
```

- 13 Follow the instructions on the screen.**

- 14 When the installation is complete, remove the disk from the disk drive and store it in a safe place.**

- 15 Go to the next section, "Configuring the Interface."**

Windows

- 1 With the PC on and Windows running, insert the disk containing the CrownAdmin software for Windows in the disk drive.
 - 2 From the File menu in Program Manager choose Run.
- » **Note:** *You can't install the utilities by copying files from the disks. You must run the installation program.*
- 3 In the Run dialog box, type

```
x:setup↓
```

where *x* is the name of the drive in which you inserted the Utilities disk (for example, `a:setup↓`) and choose OK.
 - 4 When prompted, specify the directory in which to install the utilities.
 - 5 Follow the instructions on the screen.
 - 6 When the installation is complete, remove the disk from the disk drive and store it in a safe place.
 - 7 Go to the next section, "Configuring the Interface."

Configuring the Interface

This section describes the quick configuration procedure for the printer interface. For a complete discussion of all of the configuration options available through the Administration/Communications/Network *x*/CrownNet menu, see chapter 2, "Interface Configuration," of the *QMS CrownNet Interface System Administrator's Guide*.

You can make these configuration changes through any of the following means:

- **Printer Control Panel**—For information on using the printer control panel to change configuration menu settings, refer to chapter 4, "Printer Configuration," of the *Reference*.

- **CrownAdmin (for DOS, Macintosh System, or Windows) or CrownNet Manager for OS/2**—For more information on using this software, refer to the appropriate chapter in the system administrator's guide.
- » **Note:** *CrownAdmin/CrownNet software is not available for the UNIX environment.*
- **Remote Console**—For information on accessing Remote Console, refer to the appropriate chapter in the system administrator's guide. For information on using Remote Console, refer to the *QMS Crown Remote Console User's Guide*.

EtherTalk

- 1 **If your network has more than one zone, use the Administration/Communications/Network 2/CrownNet/EtherTalk/Zone Name/Zone Part 1 and Zone Part 2 menus to enter the name of the zone to which the printer is attached.**
 - » **Note:** *The two Zone Part x menus allow you to identify 1 zone with a name up to 32 characters long. (Up to 16 characters can be entered in each of the two menus). You cannot use these two menus to identify two zones.*

All standard printable ASCII characters are valid except the @ and ' symbols. Trailing spaces are not considered part of the zone name.
- 2 **Go to the next section, "Configuring the Network."**

LAN Manager/LAN Server

- 1 **One unique printer name is broadcast to the network. Use the Administration/Communications/Network 2/CrownNet/Lan Manager/Printer Name menu to enter the name of the printer.**
 - » **Note:** *The name can be up to 16 characters long. Spaces and lowercase characters are not allowed. However, Underscore characters () are allowed to simulate multiword names (for example, PRODUCT_MKTG).*

Configuring the Interface

- 2 Go to the next section, “Configuring the Network.”

NetWare

If you want something other than the default settings, use the following procedure to name the file and print servers. These names must be unique.

- » **Note:** *In CrownAdmin, the printer shows up as QMS-xxxx-Print-System-hardwareaddress, where xxxx is the printer model number and hardwareaddress is the printer's hardware address as found on the printer start-up page.*
- 1 **In the Administration/Communications/Network 2/CrownNet/NetWare/Config PServer/File Srv Name[1], File Srv Name[2], and File Srv Name[3] menus, enter the name of the target file server.**
 - » **Note:** *The three File Srv Name[x] menus allow you to identify 1 file server with a name up to 48 characters long. (Up to 16 characters can be entered in each of the three menus). You cannot use these three menus to identify three file servers.*

Spaces and lowercase characters are not allowed within file server names. However, underscore characters (_) are allowed to simulate multiword names (for example, PUBS_SERVER). At the printer control panel only, a space must be used following the last character of the file server name to end the name.
 - 2 **In the Administration/Communications/Network/NetWare/Config PServer/PServer Name[1], PServer Name[2], and PServer Name[3] menus, enter the name of the configured print server.**
 - » **Note:** *The three PServer Name[x] menus allow you to identify one print server with a name up to 48 characters long. (Up to 16 characters can be entered in each of the three menus). You cannot use these three menus to identify three print servers.*

Spaces and lowercase characters are not allowed in print server names. However, underscore characters (_) are allowed to simulate multiword names (for example, PUBS_PSERVER). At

the printer control panel only, a space must be used following the last character of the print server name to end the name.

- 3 In the Administration/Communications/Network 2/CrownNet/NetWare/RN Printer/Printer Slot # menu, enter the printer slot number.**
 - » **Note:** *This number must match the slot number chosen in the Printer Configuration submenu of the Print Server Configuration menu in the NetWare PCONSOLE utility.*
- 4 In the Administration/Communications/Network 2/CrownNet/NetWare/RN Printer/PServer Name[1], PServer Name[2], and PServer Name[3] menus, enter the name of the print server.**
 - » **Note:** *The three PServer Name[x] menus allow you to identify 1 print server with a name up to 48 characters long. (Up to 16 characters can be entered in each of the three menus). You cannot use these three menus to identify three print servers.*

Spaces and lowercase characters are not allowed. However, underscore characters (_) are allowed to simulate multiword names (for example, PUBS_PSERVER). At the printer control panel only, a space must be used following the last character of the print server name to end the name.
- 5 Reset the NIC by using the Administration/Communications/Network 2/CrownNet/Common/Soft Reset menu.**
- 6 Go to the next section, “Configuring the Network.”**

TCP/IP

- 1 /If necessary, in the Administration/Communications/Network 2/CrownNet/TCPIP/Internet Address menu, enter the printer’s Internet address.**

The factory default Internet address is 161.033.128.024.

- 2 If necessary, in the Administration/Communications/Network 2/CrownNet/TCPIP/Default Router menu enter the Internet address of the default router.**

The factory default router address is 000.000.000.000.

Configuring the Network

- 3 If necessary, in the Administration/Communications/Network 2/CrownNet/TCPIP/Subnet Mask menu enter the printer's subnet mask.**

The default subnet mask is 000.000.000.000. This setting provides automatic sensing of gateways. If you identify a subnet mask, automatic sensing is disabled.

- 4 Go to the next section, "Configuring the Network."**

Configuring the Network

EtherTalk

- 1 With the Macintosh running, from the Apple menu, choose Chooser.**
- 2 Click the LaserWriter icon.**
- 3 If your network has more than one zone, click the name of the default zone.**

The printer name is automatically displayed in the default zone.

- 4 Select the name of the printer.**
- 5 Click the close box.**

LAN Manager/LAN Server

- 1 With the CrownNet Manager for OS/2 installed and running, add the printer by clicking the Install entry on the action bar.**

The printer appears in the list displayed on the screen (for example, QMS_080086000001).

- 2 Use the appropriate section below to create a print queue and assign it to the printer.**

OS/2 Version 1.x

If you're using OS/2 version 2.x, skip to the next section.

- » **Note:** *This is the standard method of adding a printer in OS/2 version 1.x. The procedure is repeated here for your convenience.*

Add a Printer

1 With the Print Manager open, from the Setup menu choose Printers...

2 In the Printers dialog box, choose Add...

- » **Note:** *If you're working with an existing printer, select the printer name and choose Change.*

The Add Printer (or Change Printer) dialog box appears.

3 In the Name field, type the printer name (only if you are adding a printer).

The printer name is local to the workstation and is used to associate queues with physical printers. It can be the same as the name used at the printer.

4 In the Device box, select the printer's pipe name.

Pipe names have the form `\PIPE\QMS_name` where *name* is the printer's default hardware address or the printer name set in the "Interface Configuration" section, earlier in this chapter.

5 Select IBMNULL as the printer driver.

6 If appropriate, fill in the Description and Printer Timeout Transmission Retry boxes.

7 Choose Add... to return to the Printers dialog box.

- » **Note:** *If you're working with an existing printer, choose Change.*

8 In the Printers dialog box, choose OK to return to the Print Manager.

Configuring the Network

Add a Print Queue

- 1 **With the Print Manager still open, from the Setup menu choose Queues...**
- 2 **In the Queues dialog box, choose Add...**
 - » **Note:** *If you're working with an existing queue, select the queue to be changed and then choose Change.*

The Add Queue (or Change Queue) dialog box appears.
- 3 **In the Name field type a name for the queue (only if adding a queue).**

This is the name available to workstations on the network. It can be the same as the name set for the printer.
- 4 **If appropriate, fill in the Description, Queue Driver, Priority, and Scheduling boxes.**
 - » **Note:** *Separator pages are not currently supported.*
- 5 **Select the printer name you identified in the previous section from the list of Printers.**

This name will be displayed in the box titled Select the Printer to be Used by This Queue.
- 6 **Choose Add... to return to the Queue dialog box.**
 - » **Note:** *If you're working with an existing queue, choose Change.*
- 7 **In the Queue dialog box choose OK to return to the Print Manager window.**
- 8 **Skip to "Print Queue Sharing."**

OS/2 Version 2.x

- » **Note:** *This is the standard method of installing a printer in OS/2 version 2.x.*
- 1 **With OS/2 running, double-click the Templates folder.**
 - 2 **Hold down the right mouse button and drag the Printer icon out to the Workplace Shell (or into a folder).**

- 3 Type a name in the Printer Name field.**
- 4 Select a printer driver from the Default Printer Driver list.**

IBMNULL is recommended.

- 5 Select a pipe name from the Output Port list.**

Pipe names have the form `\PIPE\QMS_name` where *name* is the printer's default hardware address or the printer name set in the "Interface Configuration" section, earlier in this chapter.

If a QMS pipe is not available, make sure you have installed the CrownNet Manager for OS/2.

- 6 Choose Create to confirm the new printer definition.**
- 7 Continue with the following section, "Print Queue Sharing."**

Print Queue Sharing

To access a print queue from other workstations or servers on the network, the queue must be a shared resource. The following procedure is only one of the ways a queue can be shared. For other methods, see your LAN Manager/LAN Server documentation.

» **Note:** *You need administrator privileges to perform this operation.*

- 1 If necessary, with OS/2 running, open an OS/2 window.**

- 2 Type**

```
net share queue_name /print┘
```

where *queue_name* is the queue or printer object you created above.

» **Note:** *While queue and printer names may differ in OS/2 version 1.x, they are the same in version 2.x.*

NetWare

Add a Print Server

- 1 From any network workstation, log in as supervisor to the file server you want to service the printer.
- 2 Start the NetWare PCONSOLE utility.
- 3 At the Available Options menu, select Print Server Information and press Enter.
- 4 To create a new print server, press the Ins[ert] key on the workstation keyboard.
- 5 Type the name (up to 48 characters) of the new print server, and press Enter.
- 6 Press Esc to return to the Available Options menu.

Assign a Print Server to a Print Queue

- 1 From the Available Options menu, select Print Queue Information and press Enter.
- 2 If you want to select an existing print queue to be serviced by the print server, skip to step 4.
If you want to create a new print queue, press the Ins key.
- 3 Type the name of the new print queue and press Enter.
- 4 Select the queue you want the print server to service, and press Enter.
- 5 In the Print Queue Information menu select Queue Servers and press Enter.
- 6 Press the Ins key to display the Queue Server Candidates menu.
- 7 Select the appropriate print server name and press Enter.
- 8 Press Esc four times to display the Exit PCONSOLE menu.

- 9 **Select Yes and press Enter to save your changes and exit from PCONSOLE.**

TCP/IP

- 1 **Log on the UNIX system as root.**
- 2 **Edit the system host table by adding the following line to the /etc/hosts file:**

```
internetaddress hostname
```

where *internetaddress* is the Internet address of the printer (Administration/Communications/Network 2/CrownNet/TCPIP/Internet Address menu) and *hostname* is the name of the host.

- 3 **If necessary, set the hardware address.**



Caution: *We strongly recommend that you do not change the hardware address.*

If you're working on a system other than a UNIX system, set the hardware address through the printer control panel.

If you're working on a UNIX system, send the hardware address to the print server by typing

```
arp -s hostname hardwareaddress temp↵  
ping hostname↵
```

where *hostname* is the name of the host and *hardwareaddress* is the hardware address of the printer (in the form *##.##.##.##* as found on the printer start-up page and in the Administration/Communications/Network 2/CrownNet/Common/HW Address menu).



Note: *You can also send the hardware address of a UNIX system through the BOOTP and RARP utilities.*

For More Information

In addition to this chapter, the following documentation contains information you may need when using the Ethernet (CrownNet) interface:

- *QMS CrownNet Interface System Administrator's Guide*—Provides detailed configuration and utility information.
- *QMS Crown Remote Console User's Guide*—Explains how to use Remote Console to control printing from a workstation anywhere on the network.
- Your network documentation—Contains information on printing.

What's Next?

Now that you've connected your printer to an Ethernet network, continue with chapter 5, "Control Panel," to learn about the printer's control panel keys, indicators, and message window.



5

Control Panel

In This Chapter . .

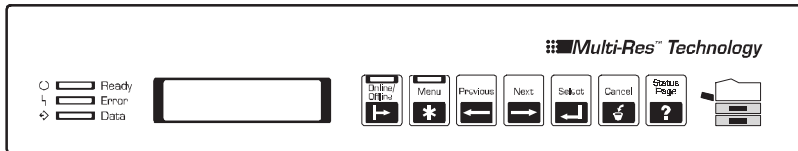
- Control panel indicators
- Control panel message window
- Control panel keys

Introduction

The control panel, located on the front of the printer, allows you to direct the printer's operation. In addition, it displays the current status of the printer, including any condition that needs your attention.



The control panel consists of the following parts:

- Eight indicators provide printer status information and identify the current media source.
- A message window displays status and configuration information.
- Seven keys allow you to control the printer.



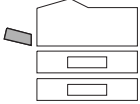
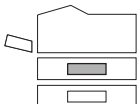
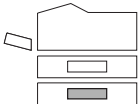


Control Panel Indicators

Five indicators on the control panel display printer status information, and three other indicators (located on the print engine diagram) identify the current media source:

○  Ready	Flashes when the printer is warming up. It remains on when the printer is ready to receive a print job and while it is processing or printing a job (unless an error is encountered).
⚡  Error	Lights when the printer requires operator intervention. This indicator is usually accompanied by a status message in the message window.
◊  Data	Lights when the printer is receiving data from one or more of the simultaneous interfaces.

Control Panel Indicators

 The icon shows a rectangular button with the text "Online/Offline" at the top and a right-pointing arrow below it.	Lights when the printer is on line and ready to accept and process new print jobs. Press it once to take the printer off line (the indicator is not lighted) and make the printer ready for configuration.
 The icon shows a rectangular button with the text "Menu" at the top and an asterisk symbol below it.	Lights when you access the configuration menu and remains on until you press the Online/Offline key to put the printer back on line.
 The icon shows a diagram of a printer's paper tray with the top flap open and a shaded area in the middle tray.	Lights when the multipurpose tray is the current input bin.
 The icon shows a diagram of a printer's paper tray with the top flap open and a shaded area in the bottom tray.	Lights when the lower cassette is the current input bin.
 The icon shows a diagram of a printer's paper tray with the top flap open and a shaded area in the top tray.	Lights when the optional cassette is the current input bin.

Message Window

The control panel message window provides status and configuration information. Status messages are listed in chapter 6, “Troubleshooting,” of the *Operation* manual. Printer configuration is explained in chapter 4, “Printer Configuration,” of the *Reference*.

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.

If you’re not familiar with using the configuration menu, refer to chapter 4, “Printer Configuration,” of the *Reference* for complete information.

Menu	Administration/Miscellaneous/Keypad Language
Choices	English, French, German, Spanish
Default	English
Notes	The printer must be restarted for changes to this 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.

Control Panel Keys

Online/Offline, Cancel, and Status Page Keys

The Online/Offline, Cancel, and Status Page keys access frequently used printer options.



Press the Online/Offline key once to take the printer off line (the indicator goes out). You must take the printer off line before using all other keys except the Cancel and Status Page keys.

When the printer goes off line, the communication ports are closed, so no new data is accepted. The printer continues printing until it has finished all jobs in process. Although jobs continue to compile and print using the data already received, a job may be interrupted, causing it to wait for more incoming data before printing resumes.


When the printer is off line, press the Online/Offline key once to place it back on line and ready to accept new print jobs (the indicator goes back on). If a remote console has taken the printer off line, pressing the Online/Offline key will not take effect until the console puts the printer back on line.



Press the Cancel key to cancel all print jobs currently printing, interpreting, or spooling, or to send an end-of-job indicator to print jobs waiting for incoming data. The printer then resumes printing other print jobs in the queue. If you press the Cancel key by mistake, or if you decide not to cancel a print job after pressing this key, press the Menu key to "cancel" the Cancel key's function.

See chapter 3, "Advanced Printing Features," of the *Operation* for complete information.) It is not necessary to take the printer off line first.




Control Panel Keys

	<p>Press the Status Page key to print a page listing the current printer settings. It is not necessary to take the printer off line first.</p> <p>See the “Special Pages” section of chapter 4, “Printer Configuration,” in the <i>Reference</i> for more information.</p>
---	--

Menu, Next, Previous, and Select Keys

The Menu, Next, Previous, and Select keys are used in printer configuration (explained in detail in chapter 4, “Printer Configuration,” of the *Reference*). Before using any of these keys, you must press the Online/Offline key to take the printer off line.

- » **Note:** *The printer must be idle and off line before using these keys to make configuration changes. If the printer is not idle, print jobs may be lost.*

	<p>Press the Menu key to access the configuration menu after the printer goes off line. When you're changing printer configuration, press this key to cancel a change (before pressing the Select key), to return to a previous menu, or to return to a previous character when entering character information.</p>
	<p>Press the Next key to advance through the list of selections or options for the current menu. When changing character information, use this key to advance to the next choice for the current input character.</p>
	<p>Press the Previous key to return to the previous selection or option for the current menu. When changing character information, use this key to return to the previous choice for the current input character.</p>



Press the Select key to access a menu or to choose a displayed menu option.

What's Next?

Now, you're ready to print. For more information on the day-to-day operation of your printer, refer to the *Operation* manual. For more technical information, refer to the *Reference* manual.



A

QMS Customer Support

In This Chapter . . .

- Sources of customer support
- QMS world-wide offices

Sources of Support

Several sources of help and information are available, depending on the type of help you need:

Your QMS Vendor

Your local vendor (the one from whom you bought the printer) may be best equipped to help you. Your vendor has specially trained service technicians available to answer questions, and the equipment to analyze your printer problems.

Your Application Vendor

Often, "printing" problems have more to do with the application being used than with the printer. In this case, the application manufacturer is the best source of help.

Q-FAX

Q-FAX, a QMS information retrieval service, provides application notes, technical support notes on common printing problems, and information about printer specifications, options, accessories, consumables, and prices.

In the United States and Canada, call (800) 633-7213 to reach Q-FAX. In all other countries, call (334) 633-3850. Have your fax number handy when you call (or place the call from your fax machine's handset).

You can choose to have either a directory (a list of currently available documents on a particular topic) or a specific document sent to you. The first time you call, request the directory (press 2 on your phone or fax keypad when prompted). Then call back to request specific documents. You can order up to three documents per call.

The QMS Corporate Bulletin Board System

The QMS Corporate Bulletin Board System (BBS) contains technical support notes, application notes, drivers, patches, and utilities, and you may leave technical questions not requiring an immediate response on electronic mail for the Sysop (System Operator).

The bulletin board [(334) 633-3632] operates at 1200, 2400, 9600, and 14400 baud, 8 data bits, no parity, 1 stop bit, with XMODEM, YMODEM, and ZMODEM capabilities. Contact QMS Customer Technical Assurance for more information about the bulletin board.

CompuServe

Through CompuServe, you ask general (non-technical) questions, share information with other users, and access printing information and programs. When you use CompuServe, type `go qmsprint` to go directly to the forum where QMS is located. The QMS library section contains application notes, printer drivers, utilities, technical information, and announcement files.

Internet

The QMS server provides access to technical reports, new product announcements, a trade show schedule, and other general information about QMS.

You can access the QMS server via any one of the many web viewers available to Internet users. If you don't have access to a web viewer, we recommend the NCSA Mosaic web viewer (Mosaic is at <ftp.ncsa.uiuc.edu>). The QMS home page is at <http://www.qms.com/>. The QMS FTP resource is <ftp.qms.com>.

QMS Customer Response Center (CRC)

The QMS Customer Response Center (CRC) is available M-F, 7:00 am-6:00 pm, Central Standard Time, at (334) 633-4500 (US). You can also fax questions to the CRC at (334) 633-3716 (US). Please indicate whether you would like a faxed or a phoned reply.

If you call for assistance, have the following information ready so our technicians can help you more quickly:

- Your phone number, fax number, and shipping address
- A description of the problem
- The printer model and serial number
- The type of host computer you are using
- The type and version of operating system you are using
- The interface you are using, and, if serial, the protocol
- The application and version you are using
- The emulation you are using
- Your printer firmware version (listed on the status/start-up pages)

QMS National Service

The following numbers are valid in the US. To contact QMS in other countries, see the list of world-wide offices in the following section.

(800) 762-8894	Call for service information and maintenance pricing for repair of all QMS printers and printers of various other manufacturers.
(800) 858-1597	On-Site Service and Depot Repair Information 7:00-7:00 pm, Central Standard Time
(334) 633-4300 (x2530)	Spare Parts Ordering and Information

QMS World-wide Offices

United States/ Latin America	<p>QMS, Inc. One Magnum Pass Mobile, AL 36618 (334) 633-4300</p> <p>Product Information: (800) 523-2696 OEM Information: (800) 631-2692 Consumables: (800) 777-7782 Fax: (334) 633-4866 E-mail: info@qms.com Latin America Fax: (334) 639-3347</p>
Asia-Pacific	<p>QMS Asia-Pacific Melbourne 61 (3) 899 5777 Sydney 61 (2) 901 3235 Tokyo (81) (3) 3437 4030</p>
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Europe, Middle East, Africa	<p>Düsseldorf (49) 211/596 1333 London (44) 1 784 442255 Maarssen (31) 3465 51 333 Paris (33) (1) 4107 9393 Stockholm (46) (8) 725 5680</p>

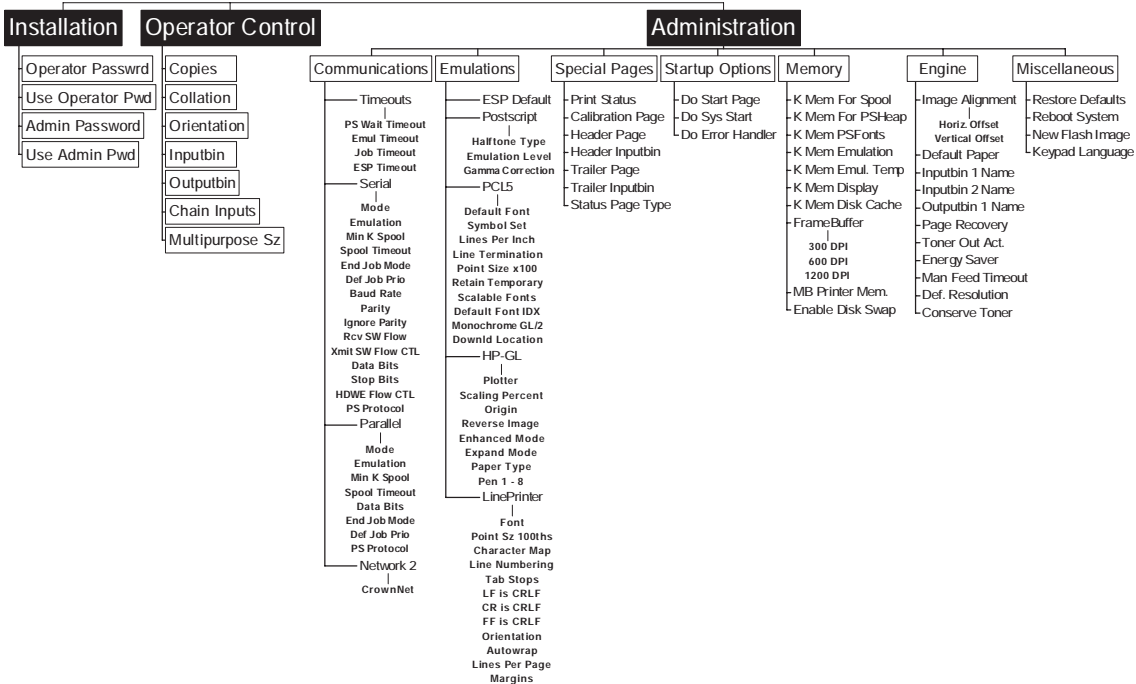


B

Configuration Menu

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» Note: We have scaled this diagram to fit it on the page. We recommend that you enlarge it on a photocopy machine for ease of use. ❖

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