

SP Series Info Central

Welcome to Info Central for Datacard SP35 and SP55 card printers.

What do you want to do?

- [Answer questions you have about using the printer](#)
- [Learn how to use this online information](#)
- [Learn more about tasks, such as installation, setup, or maintenance](#)
- [Solve problems with printing](#)
- [Access an online version of the Printer Guide](#)
- [Open help for the Printer Toolbox and Messages](#)
- [Open help for Properties or Printing Preferences](#)
- [Safety and compliance \(FCC\)](#)

Answer questions you have about using the printer

What is “SmartDriver”?

The SmartDriver™ is the printer driver for several Datacard desktop printers, including SP35, SP55, Select™ and Magna™ Platinum™ Series, Select and Magna Class printers with Advanced Imaging Technology, and the ImageCard IV printer. Older printers, such as the Express Class, use a similar driver that supports only that type of printer.

The SmartDriver provides bi-directional communication. Bi-directional means that the driver both sends and receives data. The driver sends card data, queries, and commands to the printer. The driver receives data such as status and error notices from the printer.

As part of bi-directional communication, the driver identifies the type of printer attached (when the printer is powered on and ready). The driver changes the settings displayed or the settings available to match the features of the printer.

How do I obtain Technical Support?

Most customers purchase their Datacard printer from a distributor or value-added reseller. Your dealer or value-added reseller should tell you who to contact for technical support. If that information is not available, contact Datacard.

Contact the Datacard Customer Care Center at 1.800.328.3996 for service in the United States and Canada. For worldwide service, call the Datacard Customer Care Center directly at 952.988.2316. Make sure you have the serial number, located on the inside of the printer, when you call.

The Datacard Web site, at www.datacard.com, also provides several resources:

- The Support and Service area of the Web site provides a FAQs (Frequently Asked Questions) area where you can search for information about a problem you experience. You also can submit suggestions for topics to address.
- The Support and Service area provides contact information for service providers outside of the United States.
- The Support and Service area provides Phone Support Information. This area provides the telephone numbers above and additional information.
- The Support area provides information about services that are available, including training.
- The Downloads area provides access to the latest printer drivers, printer firmware, and user information. It also provides online brochures, white papers, and other resources to enhance your understanding.

Learn how to use this online information

The following descriptions can help you use the HTML Help Viewer window to find and read the information you want.

About Info Central

SP Series Info Central is a library on the PC that provides access to all user information for SP35 and SP55 printers. Info Central is made up of several compiled Microsoft HTML Help files which are linked together. It includes:

- Toolbox and Message Help for the SP Series Printer is one of the files linked to Info Central.
- Help for Properties or Printing Preferences, a traditional help file, can be opened from Info Central.
- The e-Guide for SP Series Printers is linked to Info Central and provides detailed information about using the printer and driver.
- The Printer Guides, provided in printed form with the printer, are also available online through Info Central and through links.

SP Series printers are designed to be simple and easy to use. However, they are also flexible printers. For that reason, there is information that a few users need but that does not apply to others. Info Central provides all of this information--not all of it will apply to you.

Info Central uses the Microsoft HTML Help Viewer, which is part of the operating system for Windows Me, Windows 98 Second Edition (and Windows 98), Windows 2000, and Windows XP. The HTML Help Viewer uses Microsoft Internet Explorer. The SmartDriver checks for Internet Explorer when it installs and warns the installer if it is not present. The SmartDriver also makes sure that special files to enable HTML Help are present.

Accessing Info Central and Help

Info Central is available from the desktop icon. The "Central" in the name is used because it provides access to online versions of other user information, specifically the printer guide and help.

Help is available from Messages by clicking the Help button.

Help is available from the pages the Printer Toolbox by clicking the Help button.

Help is available in the Properties dialog box by clicking the Help (?) icon and then clicking a setting. On Windows 2000 and XP, help is available in the Printing Preferences Advanced Options dialog by clicking the Help (?) icon and then clicking in the Printer Features list.

Navigating in Info Central

Topics in Info Central include several features for providing complete information in a compact manner.

Related Topics Lists: This list of topics appears at the end of message help topics. The topics are relevant to the page you are viewing and cross-reference related information. Click a topic from the popup and it opens in the right-hand pane.

Help viewer window size: You can change the size of the viewer window like any other window:

- Minimize the window so it displays only in the task bar.
- Maximize the window so it occupies the whole desktop.
- Restore the default size.

- Position the cursor over the edge of the window and drag the edge to a new location.

Left-hand pane: You can hide (close) or show (open) the left-hand side of the HTML help viewer. The left-hand side of the window provides navigation choices--ways for you to find topics of interest to you. The left-hand pane provides:

- **Contents:** The Contents tab displays an expanding list of the information available through Info Central. Each line includes a symbol and text. If the symbol is a closed book, you can click the plus (+) sign, the book, or the text to display additional topics. If the symbol is a page with question mark, you can click the symbol or the text to view the topic in the right-hand pane.
- **Index:** The Index tab displays a list of terms or phrases. Each term is associated with one or more topics. In the box above the list of terms, you can type a term or part of a term and the list will scroll to entries that match the characters you typed. To see topics associated with a term, double-click the term. If more than one topic is associated with the term, a Topics Found box appears listing the topics. Click a term to view the topic in the right-hand pane. If only one topic is associated with the term, the topic appears in the right-hand pane.
- **Search:** The Search tab helps you find words in Info Central. In the box at the top of the tab, type the word you want to find. Click the "List Topics" button to display a list of all topics that contain the word you want to find. From the list of topics, click a topic and then click the Display button to display the topic in the right-hand pane.

Printing

You can print a single topic or several related topics from Info Central. The printing choices are affected by the version of Internet Explorer and Microsoft HTML Help Viewer installed on your PC.

To print a single topic:

- 1 Begin with the topic displayed in the right-hand pane.
- 2 Make sure that all items in the topic that you want to print are displayed. For example, drop-down hotspots must be expanded if you want them on the printout.
- 3 Click Print.
- 4 Select "Print the selected topic" and click OK.

To print all topics in a selected book:

- 1 Begin with the Contents tab displayed and select the book you want to print.
- 2 Make sure that all items in the topics in the book that you want to print are displayed. For example, go to each topic to expand drop-down hotspots if you want them on the printout.
- 3 Click Print.
- 4 Select "Print the selected heading and all subtopics" and click OK.

Learn more about tasks, such as installation, setup, or maintenance

The middle part of the Contents list is organized by tasks. Make sure the left-hand pane is displayed and scroll through the list to see the tasks available. If needed, close or open books to help you find the information you want. You can also use the Index or Search tabs to find information about a task.

Solve problems with printing

Is a message displayed on the PC?

Is the quality of the printed card a problem?

Is the problem with the printer? For example, is it making noise? Is a card stuck in the printer?

Is there a problem with the magnetic stripe?

Is the printer not responding when you send a card from the PC?

Access an online version of the Printer Guide

Do one of the following:

- The Printer Guides (one for SP35 and one for SP55) are included in the Contents list of Info Central, near the end of the list. Make sure the left-hand pane is displayed and scroll through the list to see the tasks available. If needed, close or open books to help you find the Printer Guide.
- You can also type "Printer Guide" on the Index tab to locate and display the Printer Guides.
- Click Printer Guide.

Note: The pages displayed online do not look exactly like the printed pages. However, the page numbers are the same and the content is the same.

Open help for the Printer Toolbox and Messages

Help for the Printer Toolbox and Messages is included in the Contents list of Info Central, near the bottom of the list.

Or, click Help for Printer Toolbox and Messages.

Open help for Properties or Printing Preferences

Help for the Properties or Printing Preferences uses the Microsoft Windows Help format (not HTML Help), so it is not included in the Contents list of Info Central.

Open Help

Safety and compliance (FCC)

This section presents:

- Regulatory compliance information
- Safety information
- Trademark acknowledgments

Regulatory compliance

Notice for USA (FCC notice)

This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with this instruction manual, it may interfere with radio communications. This equipment has been tested and found to be within the limits for Class A computing devices, pursuant to Subpart J of Part 15 of FCC rules, designed to provide reasonable protection against radio interference in a commercial environment. Operation of this equipment in a residential environment may possibly cause interference. In the event of interference, the user, at their own expense, will be required to take whatever measures are necessary to correct the problem.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Notice for Canada

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

The term "IC:" before the radio certification number only signifies that Industry Canada Technical specifications were met.

Notice for Europe

We hereby certify that the Datacard® SP35 or SP55 printer complies with EMC Directive 89/336/EEC and R&TTE Directive 1999/5/EC. This printer conforms to Class A of EN 55022 and to EN 301 489-5. Operation of this equipment in a residential environment may possibly cause interference. In the event of interference, the user, at their own expense, will be required to take whatever measures are necessary to correct the problem.

Notice for Taiwan

警告使用者：
這是甲類的資訊產品，在居住的
環境中使用時，可能會造成射頻
干擾，在這種情況下，使用者會
被要求採用某些適當的對策。

Notice for Japan

This equipment is in the Class A category of information technology equipment based on the rules of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). When used in a residential area, radio interference may be caused. In this case, the user may be required to take appropriate corrective actions.

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用する
と電波妨害を引き起こすことがあります。この場合には使用者が適切な対策
を講ずるよう要求されることがあります。 VCCI - A

Notice to Users of SP35 or SP55 Printers

The printer emits radio-frequency waves and must be used as installed and recommended by Datacard, the printer manufacturer. You may not modify the printer or how it is used without the written permission of Datacard. You may not operate the printer after modifying it or its method of operation.

Notice to Users of Printers Equipped with Contactless Smart Card Coupler

The contactless smart card coupler emits radio-frequency waves and must be used as installed and recommended by Datacard, the printer manufacturer. You may not modify the coupler or how it is used without the written permission of Datacard. You may not operate the printer after modifying the coupler or its method of operation.

Liability statement

This Datacard® product has been built to the high standards of DataCard Corporation (doing business as Datacard® Group). Please note and heed the WARNING and CAUTION labels that have been placed on the equipment for your safety. Please do not attempt to operate or repair this equipment without adequate training. Any use, operation or repair in contravention of this document is at your own risk. By acceptance of this system you hereby assume all liability consequent to your use or misuse of this equipment. DataCard Corporation assumes no liability for incidental, special or consequential damage of any kind. Equipment specifications, applications and options are subject to change at the sole discretion of DataCard Corporation without notice.

Safety

All Datacard® products are built to strict safety and reliability specifications in accordance with UL60950 and Canadian requirements, and the Low Voltage Directive 73/23/EEC. Therefore, safety issues pertaining to operation and repair of Datacard® equipment are primarily environmental and human interface.

The following basic safety tips are given to ensure safe installation, operation and maintenance of Datacard® equipment and are not to be considered as comprehensive on all matters of safety.

Safe environment

- Connect equipment to a grounded facility power source. Do not defeat or bypass the ground lead.
- Place the equipment on a stable surface (table) and ensure floors in the work area are dry and non-slip. Insulated rubber floor mats are preferred.
- Know the location of equipment branch circuit interrupters or circuit breakers and how to turn them on and off in case of emergency.
- Know the location of fire extinguishers and how to use them. ABC type extinguishers may be used on electrical fires.
- Know local procedures for first aid and emergency assistance at the customer facility.
- Use adequate lighting at the equipment.
- Maintain the recommended range of temperature and humidity in equipment area.

Safe human interface

- Use proper lifting techniques when moving or installing the equipment.
- Use standard electrostatic discharge (ESD) precautions when working on or near electrical circuits.
- Do not defeat or disconnect safety interlocks on covers. Operate the printer with the cover closed.

Acknowledgments

Microsoft, Windows NT, and Windows are trademarks or registered trademarks of Microsoft Corporation.

Select, Magna, Express, Advanced Imaging Technology, Platinum, SmartDriver, Preface, TruImage, and StickICards are trademarks of DataCard Corporation. Datacard, ID Works, ImageCard, and UltraGrafix are registered trademarks of DataCard Corporation.

All other trademarks are the property of their respective owners.

Installation

The printer is easy to install and use. It is also flexible; you can connect and use it in many different ways. Most often, one printer is connected to one PC. However, two or more PCs can connect to and use one printer, or more than one printer can be attached to a PC.

The information in this section has two purposes:

- If you are not familiar with installing a printer on a PC, this section provides detailed steps and information to help you.
- If you want to understand the connection choices available to you, or if you want use another connection method, this section explains what the choices are and how to implement them.

Before you install

This chapter presents the following:

- Skills that installers need
- Site requirements and guidelines
- Requirements for the PC used with the Datacard® SP35 or SP55 printer
- The preferred sequence for installing this printer as part of an identification system
- Choices for installing the printer, including using a network

Installation audience

To perform the procedures in the installation section of this guide, you need the following skills:

- Ability to read and understand written and graphical instructions
- Experience and comfort installing hardware (such as a printer, scanner, expansion card, etc.) in a personal computer (PC)
- Experience with configuring applications and ports
- Experience installing and using Microsoft® Windows® 98, Windows Me, Windows 2000 or Windows XP (for Windows 2000 and XP, the installer must have administrator access to the PC)
- Ability to perform simple troubleshooting using written and graphical instructions

If you do not feel comfortable with installing the printer, find a network support or other technical professional to install the printer. Datacard-authorized service personnel also install printers.

Site Requirements

The *SP35 Printer Guide* or *SP55 Printer Guide* describes the [site requirements](#) for each printer.

Common Sense Site Guidelines

When choosing a site for the printer and its supplies, consider these common sense guidelines:

- Keep all dust, dirt, food, liquids, etc. away from the printer at all times.
- Do not use supplies or cards that have been dropped on the floor or have otherwise become contaminated.
- Keep paper and foreign materials off the printer.
- Place the printer on a stable platform; keep it off the floor.
- Place the printer away from direct sunlight.
- Place the printer away from heating ducts, blowers, or other air vents.
- Do not use the printer for purposes other than its intended use.
- When cleaning around the printer, prevent debris from entering the printer.
- Place the printer in a clean office environment, protected from any type of construction.
- Store all supplies (ribbons, cards, etc.) in the original packaging until you load them in the printer. Keep the original packaging closed.

- Store all supplies in a clean, cool, dry location. See [Supplies Storage](#) for information about the storage environment for printer supplies.

PC and software requirements

The printer must be used with a PC that runs the printer driver. The PC also runs a card creation application that captures and organizes the data to appear on each card.

To support the printing speed that the printer can deliver, the PC must meet the following requirements:

- Have a 233 MHz (or faster) Pentium MMX-, Pentium II-, Pentium III-, or Pentium IV-compatible processor. Datacard recommends a 500 MHz (or faster) processor.
- Have at least 128 MB of memory (RAM). Datacard recommends 256 MB or more of memory.
- Have 60 MB or more of hard disk space available to store the printer driver and provide working space for preparing card data. (Additional components might require more space.) Datacard recommends at least 100 MB of hard disk space before installing the printer driver.

The PC, including processor speed, memory, operating system, applications running, and available hard disk space, can have a dramatic effect on card processing speed. The operating system or applications can require more or faster resources than the printer driver. Meet the most demanding requirements for the operating system, application, and drivers running on the PC.

- Have a one of the following:
 - USB port
 - The PC might have more than one USB port, or USB devices already attached to the PC might provide USB ports to use.

Datacard recommends using the Windows 2000 or XP operating systems if you plan to connect more than one printer to a PC using USB ports or using a USB port and another connection method.

- A network connection to support printer sharing or direct networking
- Have a CD-ROM drive to install the printer driver
- Have one of the following supported and recommended operating systems:
 - Windows XP with service pack 1
 - Windows Millennium Edition (Me)

Or one of the following supported operating systems:

- Windows 2000 with service pack 3 or 4
- Windows 98 Second Edition

The PC must also have a card creation application that formats and prepares the card data. For the PC requirements of your card creation application, see the application's documentation.

The SmartDriver cannot be used on a PC that also has an Express Class 1.x, Select Class 2.x or 3.x, Magna Class 2.x, or ImageCard IV 2.x printer driver installed on it. Delete the other printer driver, following the instructions that came with the driver, before installing the SmartDriver.

ID system installation sequence

You might use this printer as part of an identification system (with a camera) or you might use it with existing data and applications. When you set up this printer along with other system components, install

the printer driver after setting up the PC and before installing the card creation application and capture software and devices. Verify the success of each installation step before continuing.

Installation choices

Most users install one printer on a PC, using the CD-ROM shipped with the printer for installation. If you will install the printer in this way, see [Install the printer](#) and then [Install the printer driver to a USB port on Windows 2000 or XP](#) or [Install the printer driver to a USB port on Windows Me or 98](#).

More choices are available to meet the needs of a variety of users. Choices include:

- Installing two printers to one PC using USB ports

USB allows devices to be connected to the PC through another USB device (daisy-chained). USB also uses hubs to which multiple USB devices (including other hubs) can be connected (cascaded). Up to five hubs can be used between the printer and the PC. (In a daisy chain, at least every other hub needs to be powered.) Datacard printers do not have ports to support daisy chaining. If you need to connect two Datacard printers to a PC with one USB port, obtain a USB hub to which both printers can be connected.

See [Connecting more than one printer or more than one PC](#) for information about installing a printer using a USB port.
- Installing the printer using files downloaded from the Datacard Web site

The printer driver for the Datacard® SP35 or SP55 printer is available from Datacard web site at www.Datacard.com. When downloading a driver, be sure to choose the most recent SmartDriver and the correct operating system for the PC on which the driver will run. The driver to download does not include some of the files that are available on the CD, including:

 - This *SP Series Info Central* (which can be downloaded from the same Datacard Web site)
 - Installation files for the SmartDriver™ Printer Diagnostic Utility, and the Cleanup Utility
 - Driver installation files for other PC operating systems
- Upgrading the printer driver

See [Upgrading the driver](#) for the steps to follow.
- Installing a printer on a client PC when the printer is connected to a host PC and both PCs are connected to a network (using Windows printer sharing).

See [Printer sharing](#) for setup and operating information for both the host PC and the client PC.
- Installing a printer on a network using a print server and then installing the driver on a PC on the network. This method is called direct networking.

See [Direct network printing](#) for information on installing and using a directly networked printer.
- Installing two printers to a PC, when one is directly connected and another is connected through a network (using Windows printer sharing or direct networking)

See [Direct network printing](#) for information on installing and using a networked printer.
- Installing printers using a combination of connection methods. For example, one or more printers can be directly connected to the PC and others can be connected through a network.

See [Direct network printing](#) for information on installing and using a networked printer.

- Using more than one printer installed to a PC as a printer pool, when the PC is running Windows 2000 or XP. The operating system manages sending jobs to the printers so the next available printer receives the card.

See [Printer pooling](#) for information on setting up and using printer pooling.

Install the printer

This section describes how to install the Datacard® SP35 or SP55 printer. It describes:

- Unpacking the printer
- Connecting the power cord
- Connecting the data cable
- Preparing for printer driver installation

Unpacking the printer

The printer is small and easy to unpack.

- 1 Open the shipping carton.
- 2 Remove the installation map. The top side shows the accessories shipped with the printer. If the printer includes optional items, the options are checked on the installation map.
- 3 The cables, Printer Guide, and other supplies are contained in the accessories tray. For SP35, lift out the accessories tray.
- 4 The printer is located between two shipping supports. Lift off the top shipping support and put it aside.
- 5 Lift out the printer and place it on a work surface.
- 6 After connecting the printer, put the shipping carton, shipping supports, and accessories tray aside in case you need to ship the printer in the future.

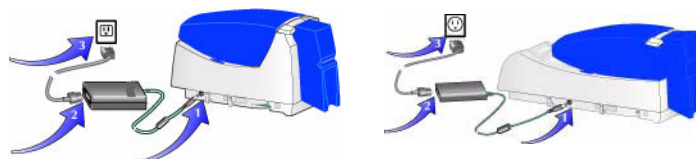
If any items are missing, contact your dealer to inform them.

Connecting the power cord

- 1 Plug the power supply cord into the printer (1). The power receptacle is located on the side of the printer.
- 2 Plug the power cord into the power supply (2).

Do not power on the printer until supplies are loaded.

- 3 Plug the other end of the power cord into a single-phase, 3-wire grounded receptacle with 90-130V AC or 195-254V AC at 50 or 60 Hz (3).



The printer power supply automatically adjusts to the voltage of the input power.

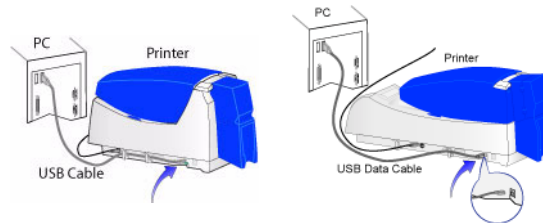
Connecting the data cable

The printer has a USB data port and requires a data cable. A printer with smart card module has one or two additional ports. Do not connect smart card ports at this time!

The USB cable must be a type CM 30V cable, up to a maximum of 6.5 feet or 2 meters long. A longer cable might result in electrical interference.

If the printer is connected over a network using a print server, see [Direct network printing](#) for information about connecting the printer.

- 1 Attach the flat end of the USB cable to the USB data port on the PC (or to a device attached to the PC through a USB port).



- 2 If you are installing the printer, Wait to connect the other end of the data cable.
- 3 If you are connecting a printer that has been installed, you can plug in the data cable now.
 - After the printer is powered on and ready, attach the other end of the USB cable to the printer. DO NOT use the smart card USB port if it is installed in the printer. The smart card USB port is closer to the power receptacle.

USB allows devices to be connected to the PC through another USB device (daisy-chained). USB also uses hubs to which multiple USB devices (including other hubs) can be connected (cascaded). Up to five hubs can be used between the printer and the PC. (In a daisy chain, at least every other hub needs to be powered.) Datacard printers do not have ports to support daisy chaining. If you need to connect two Datacard printers to a PC with one USB port, obtain a USB hub to which both printers can be connected.

Is the printer ready for driver installation?

Before installing the printer driver, do the following:

- Load cards in the card tray. See the [SP35 Printer Guide](#), [SP55 Printer Guide](#), or the Installation Map.
- Install the print ribbon and continuous cleaning roller. See the [SP35 Printer Guide](#), [SP55 Printer Guide](#), or the Installation Map.
- Power on the printer and PC. Plug the power supply into the printer power receptacle. The printer should display a series of colors on the status light when it powers on. The printer status light becomes steady green when the printer is ready.
- For a directly networked printer, make sure that the printer is ready before installing the driver on a PC. See [Direct network printing](#) for more information.
- For a shared printer, make sure that the printer is ready before installing the driver on the attached (host) PC. See [Printer sharing](#) for more information. You must install the driver on the host PC before installing the driver on any other attached PCs.

Installing the driver

The printer is shipped with a CD-ROM that contains the printer drivers for the supported Windows operating systems. The supported operating systems are:

- Windows Millennium Edition (Me) (recommended)
- Windows XP with Service Pack 1 (recommended)
- Windows 2000, with Service Pack 3
- Windows 98 Second Edition (SE)

See [PC and software requirements](#) for details on operating system support and limitations.

Installation choices

- If the PC does not have a CD-ROM drive, request diskettes from your service provider. (Service providers can obtain the driver as diskette images from the partner page.) You also can download the printer driver from the Datacard Web site, at www.datacard.com.
- If you have installed the printer driver and want to update to the most recent driver, follow the steps in [Upgrading the driver](#).
- Several other connection methods are available, including printer sharing over a network, installing two printers on parallel ports on a PC, and installing multiple printers to a PC using the USB port. See [Connecting more than one printer or more than one PC](#) for information on these installation alternatives.
- You can also directly connect the printer to a network using a print server. See [Direct network printing](#) for more information.
- See [Printer pooling](#) for information on printer pooling on the Windows 2000 and XP operating systems.
- If the printer includes a smart card module, do not connect it at this time. See [Set up Smart Card](#) for details.

Choose the section that applies to the type of port and operating system on the PC:

- [Install the printer driver to a USB port on Windows 2000 or XP](#)
- [Install the printer driver to a USB port on Windows Me or 98](#)

Install the printer driver to a USB port on Windows 2000 or XP

For Windows 2000 or XP, make sure you are logged in as the Administrator when you install the printer driver.

- 1 Close all applications. Do not close Windows.
- 2 Make sure the printer is powered on.
- 3 With Windows running, insert the CD-ROM in the PC's drive.
- 4 The SmartDriver window opens.
- 5 Click "Install the Printer." The SmartDriver installation program starts.

- If the PC has an existing SmartDriver installed, the program displays a message telling you to upgrade the printer driver. See [Upgrading the driver](#).
- 6 If you are using files downloaded from the Web, extract the files to the PC's hard drive. The SmartDriver installation program will start automatically when the files have been extracted. The first page provides a choice:
- If the SmartDriver is installed on the PC, "Upgrade the existing driver" is the default. See [Upgrading the driver](#) for the steps to follow.
 - If the installation program does not detect an existing SmartDriver, "Install the Printer" is the default. Click Next to continue.
- 7 Connect the printer to the PC using the USB data cable. The operating system detects the printer and displays the Found New Hardware Wizard.
- 8 Make sure "Local Printer (LPT or USB)" is chosen and then click Next.
- 9 A Windows message might appear.
- On Windows 2000, the Digital Signature Not Found message appears. Click Yes to continue with installation. Security on the PC might be set to prevent installation without a digital signature. See Windows help for "digital signature" to change the security setting.
 - On Windows XP, the Windows Logo Signing message appears. Click Yes to continue with installation. Security on the PC might be set to prevent installation without a digital signature. See Windows help for "Logo signing" to change the security setting.
 - If installation is cancelled or cannot continue, see [Local \(USB\) installation troubleshooting](#) for steps to follow.
- 10 The dialog instructs you to power on the printer, wait until the Ready light is steady green, and then connect the printer and PC. Follow the instructions and then click Next. The SmartDriver installation program closes.
- 11 Install the printer automatically.
- On Windows 2000, the SmartDriver installation program closes.
 - On Windows XP, the Found New Hardware Wizard starts.
 - Make sure "Install the software automatically (recommended)" is chosen and click Next.
- 12 A Windows message appears.
- On Windows 2000, the Digital Signature Not Found message appears. Click Yes to continue with installation. Security on the PC might be set to prevent installation without a digital signature. See Windows help for "digital signature" to change the security setting.
 - On Windows XP, the Windows Logo Signing message appears. Click Yes to continue with installation. Security on the PC might be set to prevent installation without a digital signature. See Windows help for "Logo signing" to change the security setting.
 - If installation is cancelled or cannot continue, see the [Local \(USB\) installation troubleshooting](#) for steps to follow.
- 13 The installation program copies files to the PC and updates entries to enable the printer. The driver installed.
- If you installed the driver from CD-ROM, the *SP Series Info Central* files and desktop icon area installed.

- If you installed the driver from downloaded files, a message appears indicating that the SP Series Info Central (or e-Guide) is not installed. You can locate the download file for SP Series Info Central and the e-Guide in the downloads area of the Datacard Web site at www.datacard.com.
- Go to [Printing sample cards](#) to complete installation.

If you will connect additional Datacard printers, you can install e-Guides for the Magna Platinum Series printer, the Select Platinum Series printer, and the ImageCard IV printer. The procedure is slightly different for these e-Guides. See the User Guide for the printer for details.

Install the printer driver to a USB port on Windows Me or 98

- 1 Close all applications. Do not close Windows.
- 2 With Windows running, insert the CD-ROM in the PC's drive.
- 3 The SmartDriver window opens automatically.
- 4 Make sure printer is powered on and ready.
- 5 Connect the printer to the PC using the USB data cable. The operating system detects the printer and displays the Add New Hardware Wizard.
 - If you are using a downloaded file, extract the files to the PC's hard drive. The SmartDriver installation program will start automatically when the files have been extracted.
- 6 Use the Add New Hardware Wizard to start the driver installation process. Close the SmartDriver Printer Driver Setup dialog if it has started automatically.
 - For some Windows Me and 98 PCs, Windows finds USBPrint.inf and installs USB printer support. If this occurs, follow the prompts. The Add New Hardware Wizard appears again; continue.
- 7 On Windows 98, click Next on the Wizard and do one of the following:
 - If you are installing from CD-ROM, make sure that "Search for the best driver for my device (recommended)." is chosen.
 - If you are installing from files on the hard drive, click "Specify the location of the driver."
 - Click Next.
- 8 On Windows Me, the Wizard searches automatically and might open the SmartDriver installation program. If it does, go to step 12.
- 9 Browse to the location of the DSPnp.inf file and click OK and Next as prompted.
- 10 The installation program displays a question asking whether you would like to view the Release Notes. Do one of the following:
 - Click Next to continue.
 - Click Yes and then Next to open the Release Notes in WordPad. Close the Release Notes when you have viewed the information.
- 11 If you are installing from CD-ROM, choose the information to install:
 - Choose the SP Series Info Central and e-Guide. If you will connect additional Datacard printers, you can install e-Guides for the Magna Platinum-AIT printer, the Select Platinum-AIT printer, and the ImageCard IV printer.
 - Click to remove the check from any e-Guide that you do not want to install.
- 12 Click Next to copy driver files and to install the e-Guide(s) you selected.

- 13 The installation program copies files to the PC and updates entries to enable the printer.
- 14 If you chose the Magna, Select, or ImageCard IV e-guides, the installation program detects whether the Adobe Acrobat Reader program is installed on the PC. If it is not, the installation program asks if you want to install Acrobat Reader. Follow instructions provided with the printer to install Acrobat Reader.
- 15 On Windows Me, click Finish to close the Add New Hardware Wizard. Close the Windows Add New Hardware Wizard and restart the PC.

On Windows 98, the Windows Add New Hardware Wizard closes on its own. On both Windows Me and 98, the Datacard Group installation program closes when you restart the PC.
- 16 After the PC restarts, the Printer Toolbox is displayed. Click the Print Sample Card button to verify printer and driver installation.

Printing sample cards

The printer is shipped with one or more cards that are printed in the factory. You can also print a sample card, which looks like one of the factory-printed cards, using the Printer Toolbox.

Setup tips

- The printer cover is closed and latched.
 - Cards are loaded in the card tray.
 - The data cable is connected to the USB port of the printer and the corresponding port of the PC.
 - The settings for the USB port (if used) are correct. See [PC port settings](#) for more information.
 - Supplies are installed in all cartridges and cartridges are loaded correctly. See the [Printer Guide](#) for more information.
 - The printer is ready to print. The status light on the printer should be steady green when you send a sample card. See [Open the Printer Toolbox](#) for more information.
 - Use the driver sample card, not a card from a card creation application, to verify that the printer and driver are working together.
- 1 Begin with the printer powered on and connected to the PC, supplies loaded, the printer driver installed, and Windows running.
 - 2 Make sure the Printer Toolbox is open.
 - After the PC restarts, the Printer Toolbox is displayed.
 - The icon for the Printer Toolbox is located in the lower right corner of the Windows desktop. Double-click the icon to open it.
 - If the Printer Toolbox and its icon are not displayed, see the [Printer Guide](#) for steps to follow.
 - 3 Click the Sample Card button.
 - The driver identifies the type of printer and whether it prints color or monochrome images, and then sends the appropriate sample card to print.

-
- If the printer is a color printer and is using a monochrome (K) ribbon, the printed sample card will be mostly black, not full-color.
- 4 Compare the cards you printed with the cards shipped with the printer.
 - 5 When you have printed the card, you can close the Printer Toolbox or leave it open.
 - 6 Use the card to evaluate how well the printer is operating:
 - If you have just completed installation, use the comparison to complete the Installation Report and mail or fax the report to Datacard.
 - If you are checking the operation of the printer, see [Troubleshooting](#).

Setting printer permissions

If the PC to which the printer is attached has other users and runs the Windows 2000 or XP operating system, set permissions that:

- Allow users to use all features of the printer and driver, including messages. (Messages inform users when they need to change the ribbon, load cards, and fix problems.)
 - Prevent any access to the printer by unauthorized users.
- 1 From the Windows taskbar select Start, then Settings, and then Printer (and Faxes). The Printers (and Faxes) window appears.
 - 2 Highlight the SmartDriver icon by clicking on it once.
 - 3 From the menu bar, select File and then Properties. The Properties window for the SmartDriver appears.
 - 4 Select the Security tab.
 - 5 Review the Names list. If the names for which you want to specify permissions do not appear in the list, add the names.
 - a Select the Add button to open the Users and Groups dialog box.
 - b Click on the name and click Add. Repeat for each name to add.
 - c When done adding names, click OK. The Users and Groups dialog box closes.
 - 6 In the Names list, select the name for which you want to specify permissions.
 - 7 From the Permissions list, select the access:
 - For a local user of a local printer and for a user of a directly networked printer:
 - To enable printing, select Allow for Print, Manage Printers, and Manage Documents.
 - For a user who should not print on the SmartDriver printer, select Deny for all permissions.
 - Single permissions, such as the Print permission, are not supported.
 - For a user of a shared printer:
 - For a local user of the printer on the PC connected to the printer, select Allow for Print, Manage Printers, and Manage Documents. The user will be able to see all messages. The user will also be able to perform other actions, such as deleting the printer driver. (Single permissions, such as Print, are not supported for local users of the printer driver.)
 - For a user who should not print on the printer, select Deny for all permissions.

- For a user connected through a network using Printer Sharing, select Allow only for the Print permission. (Select Deny for Manage Printers and Manage Documents.)
- 8 Select Apply to save the change. Save changes for each name.
 - 9 Repeat steps 5 through 8 to add other users or groups.
 - 10 Select OK to close the Properties dialog box.

Changing the type of printer connected

The SmartDriver supports SP35 printers, Select printers (Platinum Series or with Advanced Imaging Technology), Magna printers (Platinum Series or with Advanced Imaging Technology), and ImageCard IV printers. Each of these groups is considered a printer type. You can directly connect one type of printer to a PC, install the SmartDriver, and, at a later time, connect a different type of Datacard printer. If the printer is connect using a direct network connection, the PC will detect the printer connected and change driver settings.

- If another printer is connected to a USB port, the operating system detects the new printer and starts the Add/Detected New Hardware wizard.
- On the Windows XP operating system, the operating system can detect the changed printer and display the Add/Detect New Hardware wizard. Follow the wizard. If the wizard displays a message indicating that it cannot find the ds.ppd file, click Cancel on the message box to continue and use the printer.

This feature is designed for use in limited situations, such a connecting a backup printer when the main printer is out of service.

Operating tips for changing the type of printer

- When the printer is powered up and connected, the SmartDriver detects the type of printer attached. The SmartDriver reads settings from the printer and updates values on the PC for the printer.
- The Properties or Printing Preferences dialog box includes a Printer Type setting. In addition, the Printer Toolbox displays the type of printer connected.
- You must set the Printer Type on the Client PC for a shared printer. The driver on a Client PC cannot communicate directly with the printer and so cannot determine the type of printer connected.
- If a printer is connected and running, the SmartDriver will detect it and change the Printer Type to match the machine connected. (Power off the printer or disconnect it if you do not want the SmartDriver to detect that type of printer.)

Upgrading the driver

When a newer release of the SmartDriver becomes available, you might want to upgrade the printer driver to take advantage of new features. The Printer Toolbox displays the version of the printer driver, which can help you to decide whether to update the driver. See the SP35 Printer Guide or SP55 Printer Guide if you need instructions on opening the Printer Toolbox.

The procedure to use depends on the operating system running on the PC. Choose the procedure for your PC:

Upgrading the printer driver on Windows XP and 2000

Upgrading the printer driver on Windows Me and 98 SE

You can download the current printer driver from the Datacard web site, at www.datacard.com. Go to the downloads area and click Printer Drivers. Be sure to download the correct printer driver for your operating system.

Upgrading the printer driver for Windows XP and 2000

Tips for success

- These steps apply to printers attached through a USB port and to directly networked printers.
 - Make sure you are logged in as the Administrator when you install or upgrade the printer driver.
 - To upgrade the driver, do not remove the existing printer driver if the operating system is Windows 2000 or Windows XP.
 - On a PC running Windows 2000, use the printer driver only with Service Pack 3 or 4 installed.
- 1 Close all applications. Do not close Windows.
 - 2 Start the Setup Program:
 - If the driver is on CD-ROM, insert the CD-ROM in the PC's drive.
 - If you are using files downloaded from the Web, extract the files to the PC's hard drive. The SmartDriver installation program will start automatically when the files have been extracted.
 - 3 Click "Upgrade the SmartDriver" on the SmartDriver CD-ROM program or click "Upgrade the SmartDriver" and then Next on the SmartDriver installation program.
 - 4 A Windows message appears.
 - On Windows 2000, the Digital Signature Not Found message appears. Click Yes to continue with installation. Security on the PC might be set to prevent installation without a digital signature. See Windows help for "digital signature" to change the security setting.
 - On Windows XP, the Windows Logo Signing message appears. Click Yes to continue with installation. Security on the PC might be set to prevent installation without a digital signature. See Windows help for "Logo signing" to change the security setting.
 - 5 The installation program copies files to the PC and updates entries to enable the printer. The driver installed.

- If you installed the driver from CD-ROM and *SP Series Info Central* was previously installed, the files are updated.
 - If you installed the driver from downloaded files, a message appears to inform you that the SP Series Info Central (or e-Guide) is not available.
- 6 You must restart the PC before the driver can work with the printer. Click Finish to close the installation and restart the PC.
 - 7 Follow instructions to update the printer firmware if prompted. Make sure the printer is connected to the PC and powered on before running the Firmware update utility.

If you downloaded the driver from the Internet, you can delete the SmartDriver folder from your hard drive after installing the printer driver. You can also delete the downloaded SD_xxx.exe file (where xxx represents an abbreviation for the operating system and the release).

Upgrading the printer driver for Windows Me and 98 SE

To upgrade the printer driver for Windows Me or 98 SE, first remove the existing driver. Then, install the printer, as described in [Install the printer driver to a USB port on Windows Me or 98](#). If you are upgrading the driver on a client PC that shares a printer, see [Installing the printer driver on the client PC](#).

Tips for success

- Make sure all jobs have been printed or deleted from the Print Manager before removing the existing printer driver. See Windows help to use the Print Manager.
 - The printer name and printer settings are deleted when you delete the printer driver. If needed for an application or printer sharing, you can record the printer name and settings you use before you delete the driver.
 - If you have more than one printer driver on the PC, first delete the printer driver installed most recently, if known.
- 1 If the printer is connected to the PC using a USB cable, unplug the cable from the printer before deleting the printer driver. If you do not, the operating system might install the printer again.
 - 2 Close all applications. Do not close Windows.
 - 3 Select Settings and then Printers from the Windows Start menu.
 - 4 In the Printers window, click once on the SmartDriver icon to select it. Press the Delete key.
 - 5 When the confirmation prompt appears, select Yes or OK to delete the printer driver. Follow any prompts that appear.
 - 6 Close the Printers window and close all applications.
 - 7 When the prompt to restart Windows appears, select Finish, Yes, or OK.
 - 8 Restart Windows. For Windows 2000 or XP, make sure you have permission to restart Windows and then log in as the Administrator.

Reinstalling the driver

If you have problems printing from a PC to the printer, you might need to remove the driver and install it again. Only perform the steps in section if the following is true:

- Message help includes reinstalling the driver as a solution, and you have attempted all other solutions to the message without success
- Your service provider has asked you to remove and reinstall the driver as a solution to a problem
- You can remove the driver if you will not use the printer from this PC again

You can download the current printer driver from the Datacard web site, at www.datacard.com. Go to the downloads area and click Printer Drivers. Be sure to download the correct printer driver for your operating system.

Removing the existing printer driver

Tips for success

- Make sure all jobs have been printed or deleted from the Print Manager before removing the existing printer driver. See Windows help to use the Print Manager.
 - For Windows 2000 and XP only, the Administrator and users with Manage Printers permission can delete the printer driver.
 - The printer name and printer settings are deleted when you delete the printer driver. If needed for an application or printer sharing, you can record the printer name and settings you use before you delete the driver.
- 1 If the printer is connected to the PC using a USB cable, unplug the cable from the printer before deleting the printer driver. If you do not, the operating system might install the printer again.
 - 2 Close all applications. Do not close Windows.
 - 3 Select Settings and then Printers (and Faxes) from the Windows Start menu.
 - 4 In the Printers window, click once on the SmartDriver icon to select it. Press the Delete key.
 - 5 When the confirmation prompt appears, select Yes or OK to delete the printer driver. Follow any prompts that appear.
 - 6 Close the Printers window and close all applications.
 - 7 When the prompt to restart Windows appears, select Finish, Yes, or OK.
 - 8 Restart Windows. For Windows 2000 or XP, make sure you have permission to restart Windows and then log in as the Administrator.

Running the Cleanup utility

Tips for success

- Download the Cleanup Utility from the downloads area of the Datacard Web site at www.datacard.com.
- The cleanup utility is also available on the printer driver CD-ROM.

- If you have attempted to delete the printer and the icon remains, run the Cleanup utility as though the driver was deleted.
- 1 Begin with all SmartDriver printer drivers deleted from the PC. Make sure you have restarted Windows after deleting the drivers.
 - 2 Start the Cleanup process:
 - If you downloaded the Cleanup Utility, double-click the Cleanup.exe file to extract and start the utility.
 - Insert the SmartDriVer CD-ROM in the PC's drive. Select Driver Support Programs and then click Cleanup Utility.
 - 3 Click OK and then Unzip to extract files and start the Cleanup Utility.
 - 4 Click OK when files are extracted. The Cleanup Utility starts automatically.
 - 5 Click Yes on the Question box to open the Cleanup.pdf file using Acrobat Reader. This file provides specific instructions on running the Cleanup utility. Follow the instructions carefully.
 - 6 Exit the SmartDriver window and remove the CD-ROM if used.
 - 7 When you run the Cleanup Utility, it removes the SP Series Info Central and e-Guide from the PC. When you reinstall the driver, install the SP Series Info Central and e-Guide again from the SmartDriver CD-ROM or download the most current e-Guide from the Datacard Web site at www.datacard.com.

Install the printer and driver again

The steps to follow to install the printer and driver depend on the operating system and how you will connect the printer and PC. See [Installation choices](#) for guidance.

Troubleshooting Installation Problems

This section describes some problems users have reported when installing the printer and provides solutions to those problems.

Troubleshooting any installation

The following problems might occur when installing the printer using any type of connection. Address the possible causes in the order listed.

Problem	Cause	Possible solution
The light on the power supply does not come on within 30 seconds after plugging in the power supply.	The power outlet does not work.	Connect the power supply to another power source that you have verified, for example by connecting a lamp. If the other device works, assume the outlet functions correctly.
	The power strip, surge protector, or similar device is not powered on or is defective.	If you are using a power strip, surge protector, or similar device, make sure it is powered on and that other devices connected through it power on.
	The power supply or power cord does not work.	Request a replacement power supply or power cord from your dealer.
The light on the front of the printer does not come on within 2 minutes after plugging in the printer.	The printer is defective.	Contact your service provider for assistance.

Local (USB) installation troubleshooting

This section describes possible problems and their solutions when using a USB connection. Address the possible causes in the order listed.

Problem	Cause	Possible solution
Windows XP displays "USB device not recognized" when you power on the printer.	The printer status light was not steady green when the printer and PC were connected.	This is a short-term condition while all internal elements of the printer become functional. The message disappears by itself when the printer is ready.
The PC does not detect the printer when it is connected.	The printer is not powered on.	Remove one end of the USB cable. Power on the printer. When the printer Ready light is steady green, connect the USB cable.
	The USB cable is defective.	Use a different USB cable that is up to 6.5 feet or 2 meters long.

Problem	Cause	Possible solution
	The printer is connected through more than 5 hubs (or devices) or through 2 or more unpowered hubs (or devices).	Remove hubs until the printer is connected through 5 or fewer hubs (or devices) or directly to the PC. Make sure every other hub is powered.
	The printer is connected through a USB hub or device that is defective.	Replace the USB hub or, if the printer is connected through another device, connect both devices through a USB hub.
	The printer is connected with a cable that is longer than specified.	Use a USB cable that is up to 6.5 feet or 2 meters long. If the printer is connected through a USB hub or device, use a shorter cable between the PC and USB hub.
The PC does not detect the printer when you connect it.	The operating system identified the printer but you cancelled the Add/Found New Hardware wizard.	Unplug the USB cable, remove the printer from the Device Manager and then try again.
On Windows XP, the Detect New Hardware wizard does not identify the printer driver on the CD-ROM.	The operating system identified the printer but you cancelled the Found New Hardware wizard.	Unplug the USB cable, remove the printer from the Device Manager and then try again.
The Add/Found New Hardware wizard appears when the printer is connected or powered on, after the printer is installed.	Windows is associating the printer with its existing printer database.	The wizard closes. No action is necessary.
	The printer you just connected has a different serial number than the one previously connected.	The Wizard installs another copy of the printer driver. (Find the icon in the Printers Window.) This occurs because Windows tracks the serial number of each USB device connected.

Troubleshooting a direct network installation

The following problems might occur when installing the printer using a direct network connection. Address the possible causes in the order listed.

Problem	Cause	Possible solution
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Test LED does not light up on power up the print server.	The power or network connection for the print server is not working.	Make sure that the print server is connected to a power source and that the network connection is good. See the guide for the print server.
On Windows 2000 or XP, the DCNETn port does not appear in the Ports list when installing the printer.		The network port driver installation did not complete successfully.
Port status is: The port mode has not been detected.	The network address or name of the printer has not been defined.	In the printer Properties dialog box, make sure the port is a Datacard network port (DCNet_) and that the IP address or device name is configured for the port.
Port status is: Network not responding.	The print server is not responding to a query by the printer driver.	Check the power to the print server, and the connections from the printer, print server and network. Also verify the PC connection to the network.
Port status is: Communication with the printer is suspended.	The printer has been busy or the network has not responded for more than 30 seconds.	Resume the Printer Toolbox to see whether the printer is busy or the network is not responding. If the status remains, check the printer. Make sure it is powered on. See if another PC is displaying a message. Address the printer problem if possible.

Support for Direct Network Connections

If you need assistance with the installation or use of a print server and printer, do the following in the order listed:

- Closely review this Installation e-Guide to see if it addresses your issue. See the [Connecting more than one printer or more than one PC](#) section for information.
- Read the guide(s) for the print server, which addresses many common situations not specifically covered in this e-Guide.
- View the Technical Support section of the print server manufacturer's Web site.
- Request assistance from your Datacard service provider.

Removing a device from the Device Manager

Remove a device from the Device Manager if the Add/Detect New Hardware wizard was cancelled (or another installation problem occurred), or you want to reinstall the printer driver.

- 1 Disconnect the printer from the PC.
- 2 If the printer driver was installed, make sure the printer driver has been deleted and that you have rebooted the PC after deletion.

- 3 Select Start from the Windows task bar.
- 4 From the Windows Start menu, select Settings and then Control Panel. The Control Panel appears.
- 5 Double-click the System icon to open it. The System dialog box opens.
- 6 Open the Device Manager.
 - On Windows Me and Windows 98, click the Device Manager tab.
 - On Windows 2000 and Windows XP, click the Hardware tab, and then click the Device Manager button.
- 7 Make sure “View devices by type” is selected.
 - On Windows 2000 and Windows XP, select “View hidden devices” from the View menu.
- 8 Locate the device to delete. The device might be called “Unknown device” or “SmartDriver.” It is usually marked with a yellow question mark. If neither of these types of devices is displayed, go to step [10](#).
 - On Windows Me and Windows 98, click on the device name or icon to select it, and then click the Remove button.
 - On Windows 2000 and Windows XP, click on the device name to select it, and then right-click to display a pop-up menu. Select Remove from the pop-up menu.
- 9 Click Yes or OK to confirm removal of the device.
- 10 Click OK to close the Device Manager. Close any other windows.

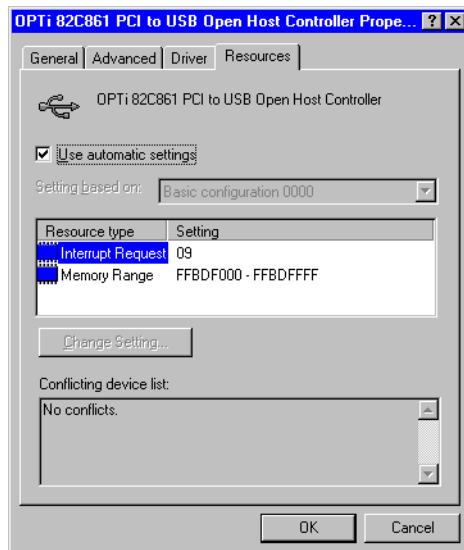
PC port settings

This section describes how to configure ports on the PC attached to the printer. For a local connection, the PC uses a USB port. If the printer includes a smart card module, that module connects to a USB or serial port on the PC. (This section does not address any network setup issues.)

Set up a Universal Serial Bus (USB) port on all operating systems

These steps apply to the USB data port and to an optional smart card USB port. If the printer includes two USB ports, follow these steps for each port. The ports are not connected inside the printer to preserve the data security of the smart card port.

- 1 Right-click on the My Computer icon on the desktop and then select Properties from the popup menu. The System Properties dialog box appears.
- 2 Select the Device Manager tab to view a list of devices. (On Windows 2000 and Windows XP, select the Hardware tab and then click the Device Manager button.)
- 3 Select "View devices by type" if needed.
- 4 Click the + next to Universal Serial Bus controllers to display the USB port controllers.
- 5 Click USB Root Hub, and then select the Properties button. (On Windows 2000 and Windows XP, right-click USB Root Hub and then select Properties from the pop-up menu.) The USB Root Hub Properties dialog box appears.
- 6 Make sure that the device is enabled.
 - For Windows 2000, Me, and 98 make sure that "Disable in this hardware profile" is not selected.
 - On Windows XP, make sure that "Use this device (enable)" is selected from the Device Usage drop-down menu.
- 7 Click OK to close the dialog box.
- 8 Click the other entry, which includes the name of the installed USB device and ends with "Host Controller," and then select the Properties button. (On Windows 2000 and Windows XP, right-click USB Host Controller and then select Properties from the pop-up menu.) The Properties dialog box appears.
 - Make sure that the device is enabled:
 - For Windows 2000, Me, and 98 make sure that "Disable this hardware profile" is not selected.
 - On Windows XP, make sure that "Use this device (enable)" is selected from the Device Usage drop-down menu.
 - Click the Resources tab. The "Conflicting device list" should show "No conflicts."



If the Resources tab shows conflicts, select another configuration or change the settings for the port, following port instructions.

- 9 Click OK on the Properties dialog box and on the System Properties dialog box to save settings and close the dialog boxes.

Serial port settings

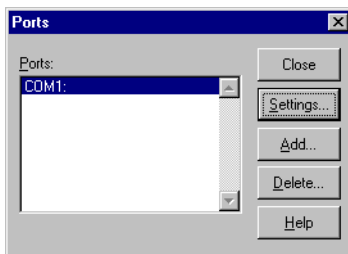
This section describes how to set serial port values. A serial port might be used with a smart card module.

For some smart card applications, you connect the PC to the serial port on the printer. The PC should be set to match the printer serial port settings.

If you use a contact station with the printer, see the information about the contact station for port settings.

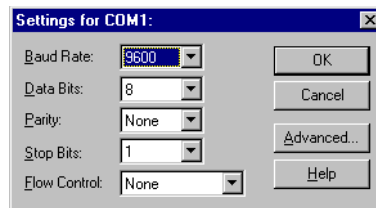
Setting the serial port on Windows 2000

- 1 From the Control Panel, select Ports.
- 2 From the Ports dialog box, select the port, such as COM1 or COM2.



- 3 Select the Settings button to display the port settings.

If the PC has more than one serial port, make sure you view the settings for the serial port to which the printer is attached.



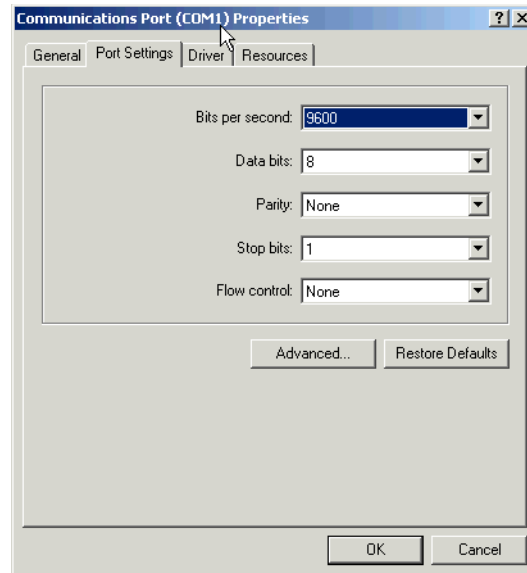
- 4 Select the following settings:

Setting	Value
Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

- 5 When the settings are correct, click OK to save settings and close the dialog box.

Setting the serial port on Windows XP

- 1 From the Start menu, select Settings and then Control Panel.
- 2 From the Control Panel, select the System icon.
- 3 Select the Hardware tab, and then select the Device Manager button.
- 4 Press the "+" next to Ports and double click the Communications Port to open the Communications Port Properties dialog box.



- 5 Select the Port Settings tab.

If the PC has more than one serial port, make sure you view the settings for the serial port to which the printer is attached.

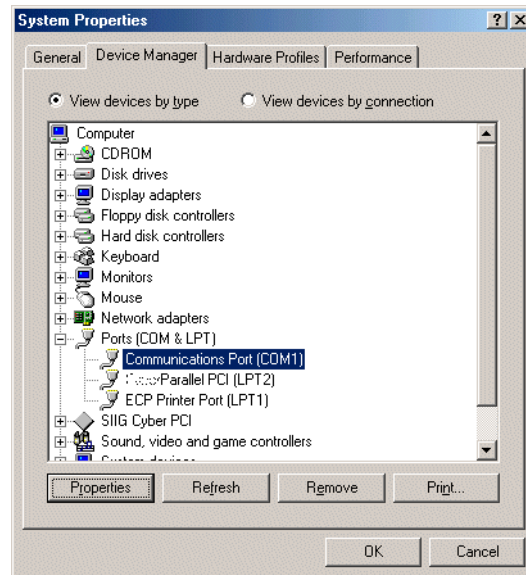
- 6 Select the following settings:

Setting	Value
Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

- 7 When the settings are correct, click OK to save settings and close the dialog box.

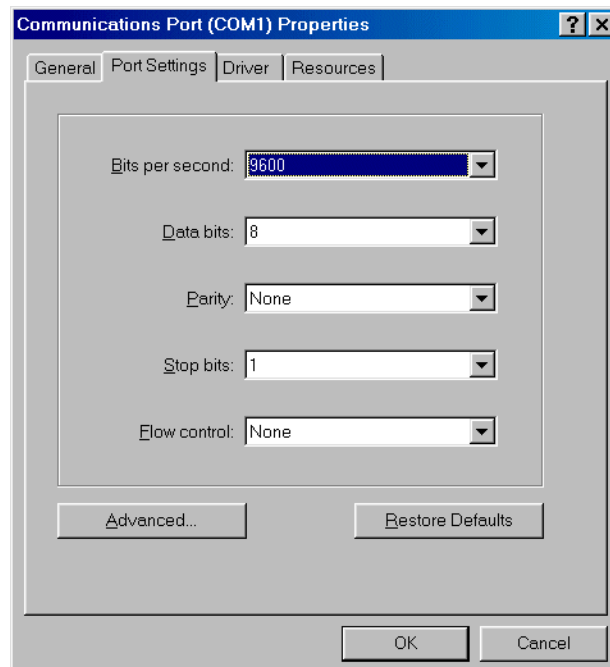
Setting a serial port for Windows Me & 98

- 1 From the Start menu, select Settings and then Control Panel.
- 2 From the control panel, select System.
- 3 On the system Properties dialog box, select the Device Manager tab.



- 4 Click the Plus sign + next to Ports (COM & LPT) to display a list of ports.
- 5 From the Ports list, select the port, such as COM1 or COM2.
- 6 Select the Properties button to display the port settings.

If the PC has more than one serial port, make sure you view the settings for the serial port to which the printer is attached.



- 7 Select the Port Settings tab.

- 8 Select the following settings:

Setting	Value
Bits per second	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

- 9 When the settings are correct, click OK to save settings and close the dialog box.

Connecting more than one printer or more than one PC

You have several choices for having more than one printer connected to a user or for having more than one user connected to a printer. Choices include:

- Installing two printers to one PC using USB ports See [Install more than one printer using a USB connection](#) for details.
- Installing a printer on a client PC when the printer is connected to a host PC and both PCs are connected to a network (using Windows printer sharing). See [Printer sharing](#) for details.
- Installing a printer on a network using a print server and then installing the driver on a PC on the network. This method is called direct networking. [Direct network printing](#) for details.
- Installing multiple printers to a PC using a combination of connection methods. For example, one or more printers can be directly connected to the PC and others can be connected through a network (using Windows printer sharing or direct networking).
- Using more than one printer installed to a PC as a printer pool, when the PC is running Windows 2000 or XP. The operating system manages sending jobs to the printers so the next available printer receives the card. See [Printer pooling](#) for details.

Install more than one printer using a USB connection

Tips for success

- More than one USB-connected printer on a PC running Windows 98 (including SE) is not fully supported. Datacard recommends using Windows Me, 2000, or XP when using more than one printer on a PC.
 - Connect and install one printer at a time. The PC cannot run two or more installation programs at the same time.
 - The USB protocol allows devices to be connected to the PC through another USB device (daisy-chained). USB also uses hubs to which multiple USB devices (including other hubs) can be connected (cascaded). Up to five hubs can be used between the printer and the PC. Datacard printers do not have ports to support daisy chaining. If you need to connect two Datacard printers to a PC with one USB port, obtain a USB hub to which both printers can be connected.
 - The printer must be powered on for the PC to detect it. It must remain powered on so the operating system can keep track of the printer if the printer is moved from one USB port or connection to another.
- 1 Begin with the PC powered on and running. Existing Datacard printers can be powered on or powered off.
 - 2 Exit the Printer Toolbox for existing printers. Right-click on the printer icon (in the lower right corner of the desktop) to display a pop-up menu. Select Exit from the pop-up menu.
 - 3 Attach the flat end of the USB cable to the USB port on the PC or on a device connected to the PC.
 - 4 Power on the printer and wait until it is ready (the printer light is steady green).
 - 5 Attach the square end of the USB cable to the printer.
 - 6 The operating system should detect the new device and display the Add/Detect New Hardware wizard. Follow the prompts.

If the operating system does not detect the printer and display the Add/Detect New Hardware wizard within a few minutes, check the Printers window to see if the icon for the new printer is displayed. At times, the Wizard runs quickly and you might not notice it. If the Wizard does not appear and the icon is not present, see [Troubleshooting Installation Problems](#) for more information.

For Windows 98 and Me, the Add New Hardware wizard might appear twice; to install USB printer support and then to install the printer driver.

- 7 In most cases, the operating system will use the existing driver files to install the driver for this printer:
 - On Windows Me, the Copying Files dialog box might appear. If it does, browse to the location on the hard disk for the Windows\System folder to continue.
 - On Windows 98 and 98 SE, Windows might prompt you to insert the printer driver CD-ROM to complete installation.

Using more than one printer on a PC

When using more than one printer on a PC, keep the following in mind:

- Select the printer to use in the application. Card jobs will be sent to the selected printer even if more than one Datacard printer is attached to the PC.
- When messages are displayed, the title bar of the message box displays the name of the printer causing the message. Keep track of which printer has which name.
- Each printer has its own icon in the Printers window, and each printer has a separate Properties or Printer Preferences dialog box. Settings are not shared among printers.
- A Printer Toolbox dialog box for each printer is displayed on the desktop (unless you minimize it).

Printer pooling

Printer pooling is a feature of the Windows 2000 and Windows XP operating systems. A printer pool treats a group of printers as one printer and distributes print jobs among the available printers.

Requirements for a printer pool

To create a printer pool for Datacard printers, you must:

- Install the printers (connect the printers and install the SmartDriver) to the same PC. You can use one or more of the following methods to install the printers:
 - Install the printer locally using a USB port
 - Install the printer using a direct network connection
- A printer pool that is installed without having an actual Datacard printer and its driver installed will not print cards.
- Use the Windows 2000 or Windows XP operating system on the PC. (Windows NT includes support for printer pooling; however the Datacard SmartDriver does not support printer pooling on Windows NT and the SP Series printer is not designed for use on Windows NT.)
- All printers must have the same features to be part of the pool. Printers can be installed before or after the printer pool is set up and will be included in the pool. By default, all directly connected Datacard printers are included in the pool, so all printers must support and use the same card features.

For example, if the cards will have magnetic stripe data encoded, all printers must have the same type of magnetic stripe module.

- Use the Datacard method for setting up printer pooling, not the Enable Printer Pooling check box on the Properties dialog box for the printer. Windows permits checking this box but does not permit displaying a message if the printer does not support it.
- Special features that require interactive mode, including reading magnetic stripe and programming smart cards, do not work with printer pooling. (The PC must communicate directly with the printer about a specific job, and this information is not available to the PC.)
- Shared printers cannot be part of a printer pool.

Set up printer pooling

To set up a printer pool on a PC:

- 1 Install each printer and its driver on the PC. See [Install the printer](#) and [Installing the driver](#) for steps to follow.
- 2 Set up each printer with the same settings, especially print ribbon type, print on both sides, magnetic stripe settings, and topcoat or overlay “apply material.” See [Printer Setup](#) if needed.
- 3 Verify the operation of each printer on its own.
- 4 Install the SmartDriver printer pool (described in the following procedure).
- 5 Set up the pool with the same values that each printer uses. See [Printer Setup](#) if needed.
- 6 Verify the operation of the printer pool.

Install the SmartDriver printer pool

- 1 Begin with Windows running and all printers installed.
- 2 Start the installation program by doing one of the following:
 - Insert the SmartDriver CD-ROM. When the dialog box appears, click “Install the Printer”.
 - Double-click the SD-2K-XP-n_n.exe file to extract downloaded driver files and start the installation program (the n_n represents the version of the driver, such as 6_0).
- 3 On the dialog box, click “Install the Printer.”
- 4 Choose “SmartDriver Printer Pool” from the list and click Next.
- 5 Respond to the Microsoft dialog box to complete installation:
 - For Windows 2000, click Yes on the Digital Signature Not Found message.
 - For Windows XP, click Continue Anyway on the Software Installation message.
- 6 The installation program runs to install the printer pool.

Use a printer pool

Begin with the PC powered on and the driver and port installed.

Tips for success

- To use the printer pool effectively, each different card must be sent from the application as a separate job. Some applications, such as Datacard’s ID Works, send each card in a batch as a separate job, while others send the batch as one job. (Multiple copies of the same card are sent as one job.) Test the application you use to determine the best way to send multiple cards to the printer pool.

- If you do not want one or more printers to print cards as part of the pool, power off that printer. The printer pool will identify a printer as available even when the printer status is Suspended or Not Responding if the printer is powered on. If you need to use a printer separately from the printer pool, install it on another PC or contact your service provider for assistance.
- Some applications track card completion status, and this data is available for cards sent to the printer pool. The application can query the printer pool and obtain status for all cards processed through the pool. Card completion status does not indicate which printer actually printed the job.
- In the Printing Preferences dialog box for the printer pool, select SP35 or SP55 as the printer type.
- For magnetic stripe encoding, use the same coercivity and magnetic stripe format values for all printers and the printer pool. (If you select "Use printer settings," make sure the settings in the printers are the same; use the SmartDriver Diagnostics Utility to view magnetic stripe values if needed.)

To use a printer pool:

- 1 In the application used to print cards, select the name assigned to the printer pool when it was installed.
- 2 Make sure that all printers you want to receive card data and print cards have the same type of supplies loaded and the same settings.

For example, to print color and encode magnetic stripe, load YMCKT ribbon in the printer and use high-coercivity magnetic stripe cards. Each printer identifies the ribbon type as YMCKT, but the pool cannot identify the Print Ribbon Type so you must set the Print Ribbon Type.

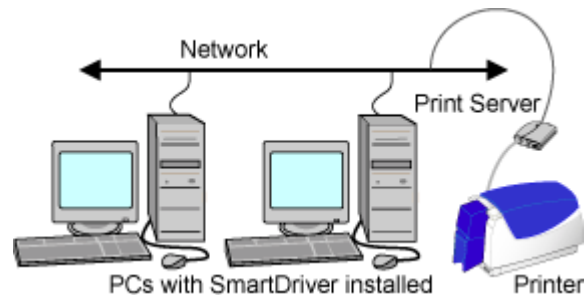
- 3 Make sure the printers are powered on and ready.
- 4 Select Print in the application. The application sends the cards to the printer pool, which randomly distributes the card jobs among the available Datacard printers. When all printers are busy, the printer pool keeps the card jobs in a queue until the next printer is not busy. It will send the next card job as soon as any printer in the pool is available.
 - A printer is available if:
 - The number of jobs active in the printer is less than the number of jobs supported for that printer type
 - No jobs are pending in the spooler for that printer
 - The printer is not paused
 - The printer is not set to "work offline"
 - The printer status is not "User Intervention Required"
 - The Printer Toolbox is not in Advanced Setup mode
- 5 After a card is sent by the printer pool to a specific printer, it cannot be removed from that printer and assigned to another printer.
- 6 When a printer issues a message, the message appears on the PC with the name of the printer in the title bar of the message box. The printer will be unavailable to print cards until the situation causing the message is corrected. Other printers in the pool will continue to receive card jobs and print cards.

Direct network printing

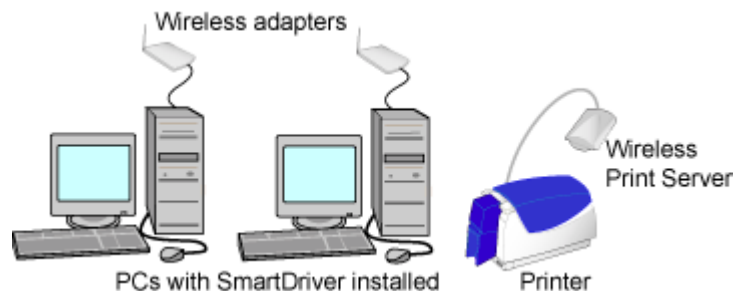
A directly networked printer is connected to a print server which is then connected to the network. A PC can connect to several directly networked printers at a time. All users receive status and message information from the printer.

Several types of directly networked connection are possible:

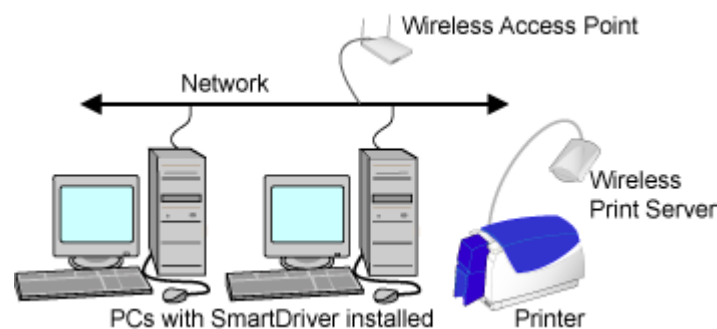
- The printer and print server can be wired into an existing network using an HP jetdirect 175x printer server



- The printer can be connected to a wireless print server, which communicates with a PC using a wireless connection on the PC (ad hoc or peer-to-peer mode), creating a local wireless network.



- The printer can be connected to a wireless print server, which communicates to a wireless access point (WAP) on an existing network(infrastructure mode). The printer location is limited by the range and availability of WAPs.



To connect an SP35 or SP55 printer directly to a network, you need the following:

- Print Server

Print servers that have been tested are:

The HP jetdirect 175x printer server uses a USB cable to connect to the printer and an RJ45 cable to connect to an available network port. It can be used with the SP35 or SP55 printer.

The HP jetdirect 380x print server uses a USB cable to connect to the printer and the 802.11b wireless (WiFi) protocol to connect to a wireless access point (WAP) on the network. It can be used with the SP35 or SP55 printer.

- **Print Server Software**

The print servers are shipped with the appropriate CD-ROM that includes the print server software you will need to set up and administer an HP jetdirect 175x or 380x print server.

- **Power supply and power cord for the print server**

The power supply and cord are shipped with the print server.

- **USB cable to connect the printer and print server**

The USB cable is shipped with the print server.

- **For a wired connection, a network cable to connect the print server to the network**

You must provide the cable to connect to your network.

- **For a wireless connection, a wireless network adapter for the PC**

The wireless network adapter must use the same wireless protocol as the print server (802.11.b.) One adapter is needed to configure the print server for both ad-hoc and infrastructure modes. If you plan to use ad-hoc mode, you also need a wireless network adapter for each PC that will use the printer.

- **PC**

- The PC must be an X86 MMX-compatible PC, running Windows Me or Windows XP (preferred) or Windows 98SE or Windows 2000. (See [PC and software requirements](#) for service pack requirements.) For a wired or wireless infrastructure connection, the PC must be connected to and working on an Ethernet network.
- The printer driver will be installed on a PC to enable the user to print to the Datacard printer. (If a previous version of the SmartDriver is currently installed on the PC, upgrade the driver following the steps in [Upgrading the driver](#) before following these steps.)
- More than one PC on the network can print to the printer. Datacard recommends that one PC be used for administrative tasks, such as running the setup utility and, if needed, Diagnostics.
- For Windows XP and 2000, users must have the same permissions as for a locally attached printer. (Power users cannot perform all the tasks required.) See [Setting printer permissions](#) for information about permissions.

- **For a wired or infrastructure wireless connection, an Ethernet network**

The Ethernet network can be either a 10baseT or a 100baseT Ethernet network. The print server is configured using the TCP/IP protocol. The print server is attached to an available network port for a wired connection or uses a Wireless Access Point (WAP) for a wireless infrastructure connection. See the documentation for the print server for details about network requirements.

- **SP35 or SP55 Printer**

- An SP35 or SP 55 printer works with the SmartDriver, version 6.0 or higher, which supports a direct network connection.
- Future releases of the printer driver will be tested for direct network support.

Choose one of the following procedures, depending on whether you will use a wired or wireless connection.

Installing a wired network connection

- 1 Connect the HP jetdirect 175x print server to the printer, using the USB cable shipped with the print server.
- 2 Connect the print server to the network. See the setup information provided with the print server.
- 3 Connect the print server to a power source.
- 4 Plug in the printer power cord to power on the printer.
- 5 Insert the print server CD-ROM in the drive of the administrative PC. The CD-ROM automatically starts. Click on Install to run the utility that sets up the print server and network printer. Follow the prompts to complete print server setup.
 - Be sure to record the server name or IP address, which you will use when you install the SmartDriver on the PCs that send print jobs.
- 6 On each PC that will send jobs to the printer, beginning with the Admin PC, install the SmartDriver. See [Installing the driver](#) and follow these guidelines:
 - Choose to install a directly networked printer.
 - Make sure that each printer has a unique name on the PC. One PC can connect to multiple Datacard printers on the network.
- 7 Configure the port to define the connection between the printer and PC.
 - a After installing the driver, open the printer Properties dialog box.
 - b In the Properties dialog:
 - On Windows 2000 and XP, make sure you are logged in as the Administrator. (Users and Power Users cannot complete this task successfully.) Select the Ports tab. Click the Configure Port button.
 - On Windows Me and 98, select the Details tab. Click the Port Settings button.
 - c Enter the server name or IP address of the print server (from step 5). If your network uses DHCP, use the server name (not the IP address, which the network changes).
 - d Click OK to save the setting. Open the Enter Network Address dialog box again.
 - e Click the Test button to verify that the PC can communicate with the print server. If the PC does not communicate with the printer, see [Troubleshooting a direct network installation](#).
- 8 With the Properties dialog box open, select the General tab. Click the Print Test Page button to send a Windows test page to the printer. If the test page prints, the printer has been successfully installed.

Installing a wireless network connection

On Windows 2000 and XP, make sure you are logged in as the Administrator. If networking is set up on the PC, log into the network.

- 1 Install the wireless network adapter, including the driver files, to the PC. Follow the instructions provided with the adapter to install it.

- 2 Change setting in the utility for the wireless network adapter (if needed) to match the default settings for the HP JetDirect 380x print server. The settings are located in the information provided with the print server.
- 3 Power on the HP JetDirect 380x wireless print server. Do not connect the print server to the printer at this time (this sequence might be different from the one the print server recommends). The power light on the print server will be on.
- 4 Insert the CD-ROM provided with the HP JetDirect 380x print server on the PC with the wireless network adapter. Set up the print server to work with the network you plan to use.
 - If needed, work with your network administrator to understand the settings to use.
 - Record the values you use so you can repeat the setup for other devices and to finish configuring the connection to the printer.
- 5 Install the SmartDriver on each PC that will use the printer. See [Installing the driver](#) and follow these guidelines:
 - Choose to install a directly networked printer.
 - Make sure that each printer has a unique name on the PC. One PC can connect to multiple Datacard printers on the network.
- 6 Configure the port to define the connection between the printer and PC.
 - a After installing the driver, open the printer Properties dialog box.
 - b In the Properties dialog:
 - On Windows 2000 and XP, make sure you are logged in as the Administrator. (Users and Power Users cannot complete this task successfully.) Select the Ports tab. Click the Configure Port button.
 - On Windows Me and 98, select the Details tab. Click the Port Settings button.
 - c Enter the server name or IP address of the print server (from step 4). If your network uses DHCP, use the server name (not the IP address, which the network changes).
 - d Click OK to save the setting. Open the Enter Network Address dialog box again.
 - e Click the Test button to verify that the PC can communicate with the print server.
- 7 Using the SmartDriver Toolbox, click the Sample Card button. If the sample page prints, the printer has been successfully installed.

Printer setup

- The Printer Type, Print Ribbon Type, and Print on both sides (or Duplex method) settings depend on the printer attached. Use the settings supplied by the printer.
- From the Admin PC, make sure the following settings in the Properties (Windows Me and 98) or Printing Preferences (Windows 2000 or XP) dialog box are correct for the printer:
 - Mag stripe coercivity
 - Mag stripe encoding format
- Consider a policy that only the Admin PC is used to make changes in the following, which make changes in the printer:
 - Firmware Update utility
 - SmartDriver Printer Diagnostics

- The Printhead tab in the Advanced Setup area of the Printer Toolbox. Any user can use the Color Settings tab, which affects processing on the PC.

Printing

- To send print jobs from a PC on the network to the printer, make sure the printer is set up, the driver is installed on the PC, and the Windows test page has printed successfully.
- Open the Properties (Windows Me or 98) or Printing Preferences (Windows 2000 or XP) dialog box. Select card design settings, such as rotation and topcoat pattern.
- Select the printer in the application, and print. The print server will handle jobs from more than one PC at a time. See [Status](#) for details.

Status

The Printer Toolbox is displayed by default when the PC starts. The icon for the printer appears in the system tray, usually in the lower right corner of the Windows desktop. (Double-click the icon to open the Toolbox, if needed.) The Printer Toolbox displays the port mode and printer status. The port mode for a printer connected using a network print server is "The port type is directly networked." The possible printer statuses are:

- Printer responding normally.
 - The printer is powered on, connected to and communicating with the network. The printer is not currently printing cards.
- Printer is busy.
 - The printer is printing, is communicating with another PC, has an error, or is powered off.
 - Users can submit print jobs. When the printer is available, the PC will send the jobs to the printer.
- Network not responding.
 - The print server is not responding to a query by the printer driver.
- Communication with the printer is suspended.
 - The printer has been busy or the network has not responded for more than 30 seconds.
 - The status might change to "Printer is busy" or "Network is not responding" after communication resumes.

Messages

- The printer driver displays messages when the driver has a problem sending a card or when the printer has a problem completing a card. Any PC with the driver installed and connected to the printer over the network using a print server can display messages from the printer.
- Messages not associated with a job, such as startup and out of ribbon messages, can appear on all PCs that send jobs to the printer.

Administration

- Several tasks should be performed only from the Admin PC. In addition, Datacard recommends that other PCs connected to the printer not use the printer while administration tasks are performed on the Admin PC. (The PCs can be powered off or users can exit from the Printer Toolbox and avoid printing. If the Printer Toolbox is active, it can display messages that result from the administrative tasks.)

- Actions you take while performing administrative functions can cause messages to be issued. At times, the messages will not be displayed on the Admin PC but can be displayed on other PCs if the Printer Toolbox is active.

Printer sharing

This section describes how you can print to a printer over a network using Microsoft File and Printer Sharing. A shared printer is connected to a PC with the printer driver installed (host PC). Users at other PCs on the network (clients) can print to the shared printer over the network. Up to 10 client PCs can share the printer at one time. Users at client PCs do not have the same level of access to the printer driver as a user at the host PC.

The following operating system configurations are supported:

- Both the client and host PCs run Windows 2000.
- Both the client and host PCs run Windows XP.
- Both the client and host PCs run Windows Me or Windows 98 (Second Edition).

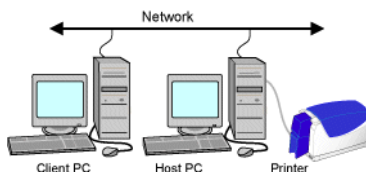
Requirements for local printer sharing

Before sharing a printer over the network, meet the following requirements:

- A network card is installed in and working on each PC to use the printer.
- The same Windows operating system is installed on and operating on each PC.
- If you are installing both a network card and a service pack or Windows upgrade, install the network card first and then install the service pack or upgrade. If you installed a service pack or upgrade before installing a network card, you must install the service pack or upgrade again.
- The printer must be enabled for sharing. See Windows help for information on enabling printer sharing.
- The PC with the printer attached must remain on, and the Windows operating system must be running. For Windows 2000 and XP, a user with Print, Manage Printers, and Manage Documents permissions to the printer must be logged on at the host PC so that other users can print.
- If more than one printer is connected to a PC and one is a shared printer, the printers must have different names.
- For Windows 2000 and Windows XP, you must set up permission for users at the client PC and permission for users at the host PC. See [Setting printer permissions](#) for more information.

Printer and PC setup

This section describes the components you need to use the SP Series printer with local printer sharing.



Network: A network must be set up and working before you begin. This guide does not address network setup or requirements.

Host PC: The host PC has the printer attached to it. The host PC must be connected to the network. For Windows 2000 and Windows XP, you need to set up users and access.

Port connection: The printer is connected to a USB port on the host PC, in the same way as though you were using it just from the host PC.

Client PC: The client PC is connected to the host PC over the network.

Setting up printing sharing

To set up printer sharing, do the following:

- 1 Install the printer driver on the host PC. See the [Installing the driver](#) for more information.
- 2 With the printer power on, change settings to reflect your card design, including printer features such as ribbon type and magnetic stripe settings. Record the settings so you can also make those settings on the client PC.
- 3 Enable printer sharing. See Windows help for more information.
- 4 For Windows 2000 and Windows XP, set up an account for each user.
 - At the host PC set up accounts for users who log onto the host PC and for users who log onto the client PC(s).
 - At the client PC set up an account for the user who logs onto the client PC.
- 5 For Windows 2000 and Windows XP, grant users' permission to the printer from the host PC, including:
 - Client PC users who have Print permission to the printer.
 - Host PC users who also have Print, Manager Printers, and Manage Documents permissions to the printer.
 - Host PC users (if any) who are denied permission to the printer.
- 6 Make sure client PC users can access the host PC from the network.
- 7 Install the printer driver on the client PC. See the following procedure.
- 8 At the client PC, set the printer type in the Properties or Printing Preferences dialog box.
- 9 Change driver settings on the client PC to match settings on the host PC.

Installing the printer driver on the client PC

Tips for success

- If an Express Class v1.x, Select Class v2.x or v3.x, Magna Class v2.x, or ImageCard IV printer driver is installed on the client PC, delete the printer driver and reboot the PC before continuing.
- For Windows 2000 and Windows XP, log onto the client PC as a user with access rights to the host PC. You also need Print permission to the shared printer to open the Printing Preferences dialog box and to print test cards.
- A PC can have a locally connected (USB) Datacard printer attached, a directly networked Datacard printer attached, and be connected to a shared printer as a client PC. All printers connected to the PC must be supported by and use the current version of the SmartDriver.

- If you use more than one connection method on a PC, install the locally and/or directly-network connected printer(s), and then follow the steps in this section to install the shared printer last. The shared printer must have a different name from the other printers.
 - If you upgrade the SmartDriver on the host PC, you need to remove the driver from the client PC. See [“Upgrading the printer driver on Windows Me and 98 SE” on page 5-15](#) to remove the existing driver. Follow the steps in this section and then restart Windows before printing from the PC.
 - Do not rename the printer on the client PC.
- 1 Make sure that the printer and driver on the host PC are working properly before beginning this task.
 - 2 Start Windows at the client PC and log onto the network.
 - 3 Use Windows Explorer, Network Neighborhood, or My Computer to locate the host PC.
 - 4 When you locate the host PC, click the icon for the host PC to display the Enter Network Password dialog box. Type your password and click OK to log on to the host PC. Keep the window open during printer driver installation.
 - 5 In the Printers window, double-click the Add Printers icon.
 - 6 In the Add Printers wizard, select the following choices:
 - a Choose the "Network printer" button, not the "My Computer" or "Local printer" button.
 - b Choose to browse for the printer. An expandable list of printers and/or PCs appears.
 - c If needed, double-click a server or PC name to see the names of printers attached.
 - d Choose the printer to which the user will print. The printer name appears in the Printer box.
 - e Change the name of the printer if needed so it is different from the name of other Datacard printers attached to the PC.
 - f Continue to follow the prompts on the Add Printers Wizard.
 - g If you have not logged into the PC with the printer attached, you will receive a message. Return to step 3 and repeat the procedure.
 - h If you are prompted, choose "Replace existing driver," not "Keep existing driver (recommended)."
 - i If you are prompted to print a test page, click No. You must set values in the Properties or Printing Preferences dialog box before printing.
 - 7 When the printer has been installed on the client PC, change settings on the client PC to reflect the printer and your card design. Open Properties (Windows Me and 98) or Printing Preferences (Windows XP or 2000) to change settings.
 - Set the printer type and click OK or Apply.
 - Set the ribbon type to match the ribbon in the printer and the setting on the host PC.
 - Change settings that apply to the printer, such as magnetic stripe, so they do not conflict with the host PC and printer features.
 - Change settings to reflect your card design, such as portrait or landscape orientation. These settings can be different from the settings on the host PC.
 - 8 From the Properties or Printing Preferences dialog box for the shared printer, print a Windows test page from the client PC.

Perform management tasks at the host PC

The user at the host PC has more control over the printer and more information about the printer. This section describes some tasks performed at the host PC.

For Windows 2000 and XP, the user must be logged in as a user with Full Control permission.

- **Manage all jobs in the print queue.** You can use Print Manager to view all jobs in the print queue and to pause or delete any jobs in the print queue, no matter who submitted the job. The job remains in the print queue until it has been sent to the printer. See Windows help for information on using Print Manager.
- **See and respond to messages.** If the printer is not able to process and print a card, the printer driver displays a message on the host PC, not the client PC. You can see the message and view help, which guides you in resolving the situation. Printing for all users is suspended until the situation is resolved.
- **On Windows 2000 and XP, set printer values, such as ribbon type, for all users.** The values you set in the Properties or Printing Preferences dialog box apply to all users. Several values can be changed at client PCs, but those values apply only to the print jobs being sent. Values you set are used at client PCs after the client PC queries the host PC. Open the Properties or Printing Preferences dialog box at each client PC after setting values at the host PC to query the host PC. (You can close the dialog box at the client PC after viewing it.) If you do not open the Properties dialog box, the client PC does not query the host PC, the first card printed will not use the new settings, and you will need to send the card to print again.
- **On Windows Me and 98, set or view values that control card processing for all users.** Record the ribbon type so you can set it correctly at the client PC. The values you set for Mag Stripe encoding can affect all users.
- **View printer status.** The host PC runs the Printer Toolbox and all status functions. The Printer Toolbox is open by default or you can double click the printer icon in the system tray to open it. See [Open the Printer Toolbox](#) in the *Printer Guide* for details.
- **Use all features of the SmartDriver Toolbox.** The Printer Toolbox on the host PC provides access to settings, including edge to edge settings and use color controls.
- **Run the firmware update utility.** The host PC displays a prompt when you need to run the firmware update utility. The utility works only from a PC with the printer directly connected to it.

Using the printer from the client PC

For Windows 2000 and Windows XP, users at the client PC must be logged into the host PC and must have Print permission to the printer. Users at the client PC can perform several actions, including:

- **Print a card using an application at the client PC.** At the client PC, you can use an application to print cards by selecting the printer in the application. See [Making Cards](#) for details.
- **Print a card using an application and magnetic stripe fonts from the client PC.** When you print from an application such as Microsoft Word, you can type text and format it using fonts provided by the printer driver.
- **For Windows Me and 98, set card design values.** Select the same Ribbon Type as the Host PC. For other settings, such as Magnetic Stripe Encoding Format, the printer must support the setting you select but the setting can be different from the Host PC setting.
- **For Windows 2000 and XP, change card design settings,** including settings such as landscape or portrait orientation. Many settings are read from the host PC and cannot be selected.

- **Do not use the Restore Defaults feature** on any operating system. The Restore Defaults function attempts to query the printer to verify its features and cannot access the printer over the network.
- **Pause or delete print jobs you submitted from Print Manager at the client PC.** The card job remains in the print queue until it is sent to the printer. See Windows help for information on using Print Manager.
- **View status of the client PC.** The Printer Toolbox dialog box is also available on the client PC. It displays the client status and a reminder that the host PC provides messages and additional status information.
- **Use the Color Settings page of the Toolbox.** The Printer Toolbox box on the client PC provides access to the Color Settings page. The color settings can be used to fine-tune the appearance of cards sent from the client PC.
- **On Windows 2000 and XP, view the Print Manager to see printer messages from the host PC.** The card job remains in the print queue until it is sent to the printer. You can expand the Status column in the Print Manager dialog box to see the messages.

On the CD-ROM

The printer is shipped with a CD-ROM that contains the printer driver (SmartDriver), user information, and other utilities and files that you might want.

The following table lists the contents of the CD-ROM, the path, and the purpose of the program, file, or utility:

	Path	Purpose
Datacard SmartDriver CD-ROM	D:\SETUP.EXE [#]	User-friendly access to all of the applications on the CD-ROM
Printer driver for Windows 2000 and XP	D:\DsPnp.inf [#]	Installation for Windows 2000 and XP that meets Microsoft Plug-and-Play requirements
Printer driver for Windows Me and 98	D:\Me-98\SETUP.EXE [#]	Custom installation for Windows Me and Windows 98
Printer driver for Windows NT (supports other printers)	D:\NT\ SETUP.EXE [#]	Custom installation for Windows NT 4.0
e-Guide installation	D:\e-Guide\SP35_e-Guide_v.exe ^{#†}	Installation program for SP Series Info Central.
e-Guide installation	D:\e-Guide\IC4_e-Guide_v.exe ^{#†}	Installation program for ImageCard IV e-Guide.
e-Guide installation	D:\e-Guide\Mag_e-Guide_v.exe ^{††}	Installation program for Magna e-Guide.
e-Guide installation	D:\e-Guide\Sel_e-Guide_v.exe ^{#†}	Installation program for Select e-Guide.
e-Guides (use the e-Guide(s) that match the printer(s) installed on the PC)	D:\e-Guide\SP Series\SP_Info_Central.chm [#] and other files with names in the SP_xxx.chm format	SP Series Info Central and e-Guide files, which contain detailed information about the SP35 and SP55 printers
	D:\e-Guide\ Magna Class with AIT\ DM-e-Guide.pdf [#] and other files with names in the M_xxx.pdf format	Magna e-Guide files, which contains error recovery procedures linked to help.

	Path	Purpose
	D:\e-Guide\ Select Class with AIT\ DS-e-Guide.pdf [#] and other files with names in the S_xxx.pdf format	Select e-Guide files, which contains error recovery procedures linked to help.
	D:\e-Guide\ ImageCard IV\ D4-e-Guide.pdf [#] and other files with names in the 4_xxx.pdf format	ImageCard IV e-Guide, which contains error recovery procedures linked to help.
Adobe Acrobat Reader installation	D:\Adobe\ AcroReader51_CHS.EXE, AcroReader51_CHT.EXE AcroReader51_DEU.EXE, AcroReader51_ENU.EXE, AcroReader51_ESP.EXE, AcroReader51_FRA.EXE, AcroReader51_ITA.EXE, AcroReader51_JPN.EXE ^{#†}	Installation program for Adobe Acrobat Reader, Version 5.1. The Reader (version 3 or higher) is required to view the e-Guides for Select, Magna and ImageCard IV printers, part of the help system.
SmartDriver Diagnostics Utility	D:\Support\Diagnostics\ SD_Diagnosticsv ^v .EXE ^{#†}	Installation program for the SmartDriver Diagnostics Utility, used to identify or fix printer problems
Cleanup Utility	D:\Support\Diagnostics\ SD_CLEANUPv ^v .EXE ^{#†}	Installation program for the Cleanup Utility, which is used after removing a version 1.x or 2.x driver.
Support files	D:\Support\color.prn D:\Support\mono.prn [#]	Files used at the direction of service for troubleshooting.
SmartDriver SDK	D:\Support\SDK\ SmartDriver SDK.exe [#]	Self-extracting file for the SmartDriver SDK which is used to write applications that work with the printer.

[#]. Where D is the drive letter of the CD-ROM drive

[†]. Where v is the version, such as C or 6.0

The printer drivers are updated from time to time to provide optimal functionality. You can obtain the most recent printer driver for the PC operating system you use from the Datacard Web site at www.datacard.com. You also can request the newest release of the printer driver on CD-ROM. The

part number changes with each release. The e-Guides are also updated from time to time and can be downloaded from the Datacard Web site at www.datacard.com.

Setting up for your card design

The driver provides settings that you can use to make sure that your cards print as you intend. These settings provide users of the printer with great flexibility in printing, encoding a magnetic stripe, or personalizing a smart card. This flexibility makes it very difficult to provide you with a step-by-step process for getting your cards to print as you intend. Instead, Datacard recommends that you do one of the following:

- Work with your value-added reseller or dealer to design cards and set up the printer to produce them
- Understand the features of your card design, read information in this section to match features to printer settings, and change the settings to produce the cards.

How do I create a card design?

- Datacard's ID Works and Preface applications are designed to capture, format, and manage the data the often appears on cards. (Other applications can use the SmartDriver API or other driver features to handle card-specific data.)
- A PC application that can be used for many purposes, such as Word, Excel, or PaintShopPro, can be used to create a card design and format the data for the cards.
- This section focuses on the settings, not the application you use. When the application has an affect on the driver settings, this section will include that information.

What is a card design?

- Card design is the name given to the combined features of the cards you produce. Cards are useful only when all cards contain the same information: Name, photo, and so on.
- The card design includes the different types of data (name, ID number, and so on), images (logo, photo, and so on), and special features such as [barcode](#), [magnetic stripe](#), or [smart card](#) on the card.
- Card design also includes the way those components are arranged.
- Finally, card design frequently includes quality guidelines. For example, an organization might print their logo in red, however another organization might require a specific shade of red for the logo.
- An organization might have more than one card design. For example, a health club is likely to produce member cards and employee cards.
- [Card design checklist](#)

When should I perform setup tasks?

- **Initial setup:** When you obtain the printer and have the card design complete, perform setup tasks to get the printer to produce the cards you want.
- **Production changes:** If you make substantial changes to the way you produce cards, review setup tasks to make sure cards continue to have the quality you require. For example, if you purchase a new brand of (unprinted) cards, you might notice changes in the color of some images.
- **New card design:** If you change the design of your cards, or if you start producing an additional card design, review setup tasks to make sure each design prints as required. You might identify changes to your process to support printing of two different designs.

What do I use to set up the printer?

- **Properties dialog box:**
On Windows 98 and Me, the [Properties dialog box](#) includes typical printer settings, such as landscape or portrait orientation, and settings for card printers, such magnetic stripe settings. It also includes port and communication settings.
On Windows 2000 and XP, the Properties dialog box includes port and communication settings and permissions.
- **Printing Preferences:**
The [Printing Preferences dialog box](#) is displayed on Windows 2000 and XP to provide typical printer settings, such as landscape or portrait orientation.
- **Printer Toolbox:**
The [Printer Toolbox](#) provides information about printer-driver communication, buttons for performing tasks such as running a cleaning card, and access to color settings and advanced setup.
- **Advanced Setup:**
[Advanced Setup](#) is a special mode that allows you to view or change some settings in the printer. For SP Series printers, you can change where printing occurs on a card and the intensity for topcoat or monochrome (single-color) printing.
- **Printer Diagnostics:**
Printer Diagnostics is a separate application that you can install to perform tests on the printer with the guidance of your service provider. It also includes settings that might need to be changed for special-purpose cards.

Why are there several interfaces to set up the printer?

- Microsoft Windows provides a set of tools that other products (such as SP Series printers) can use for viewing and changing device settings (Properties or Printing Preferences dialog box). The functions available meet some but not all needs for setting up card printers. In addition the organization and functions available are different for Windows 98/ME and Windows 2000/XP. Because the printers can be used on several operating systems and include functions that cannot be managed through standard Windows tools, more than one interface is needed.
- As Datacard's printers have changed over time, the features needed in the driver have changed. In addition, some tasks are mutually exclusive. For example, you cannot change printhead settings at the same time as you are printing cards. The current interfaces are the result of Datacard's efforts to meet the needs of customers and dealers who use the printer. (The driver for SP Series printers can be used with other Datacard printers.)
- Some tasks are advanced, requiring a higher level of knowledge about the printer. These tasks are usually performed infrequently, and only by service providers or with the guidance of service providers, and so should not be easily available.

Card design checklist

Use this checklist to guide your selection of set up tasks to perform.

Before you print the design:

- Does the card include a smartcard or magnetic stripe on the printed side of the card? If yes, set topcoat blocking to prevent application of topcoat over that feature.
- Does the card include a magnetic stripe? If yes, see [Magnetic Stripe Setup](#) for more information.
- Does the card include a smart card? If yes, see [Smart card setup](#) for more information.
- Do you want to power off the printer when fixing problems, or is saving ribbon very important to you? The "Ribbon Initialization" setting determines whether the printer moves ribbon to the start of a panel set when it powers up. If saving ribbon is very important, leave this setting unchecked and fix any problems in the printer with the power on. If powering off the printer to fix problems is more important than saving ribbon, check this setting so cards printed after printer power-on will print correctly.

Make several cards using your card design and evaluate the quality of the card.

- Are you printing barcodes? If yes, check the cards in your barcode reader to make sure they are easy to read. If needed, change the printing intensity for K to improve bar code readability.
- Are you printing both photos and a logo in color? Use the following sequence to obtain the best color quality:
 - Check the color quality of the photos first.
 - Change the image capture system (If used) to get the best quality photos. For example, work with distance, lighting, and camera settings to obtain consistent, high quality photos.
 - After you optimize the image capture system, evaluate the quality of printed photos. If needed, change the Color Settings for optimal printing of photos. Color settings affect all colored areas of the card, but you can change other components to return them to optimal color.
 - Next, evaluate the other colored areas of the card, such as text or logos.
 - You might want to use settings in the application to improve the printed color of text.
 - You might also want to use an image editing application (such as PhotoShop or PaintShopPro) to change the color of a logo file (bitmap) for optimal printing.
- If you print without a margin (the setting is edge-to-edge), observe whether the both long edges of the card appear evenly printed. If not, change the position of printing on the card. See [Fine-tune edge-to-edge printing](#) for steps to follow.

If you print with only one color (monochrome or K ribbon), decide whether to perform the following setup tasks:

- If you print photos:
 - Select a dithering method (for Windows 98 or Me) to manage how color photos are printed using one color.
 - Use the Brightness, Contrast, and Sharpness controls on the Color Settings page to obtain the best quality printed photos.
- Adapt your card design to use the ribbon saver feature. See [Using Ribbon Saver](#) for details.

- Change the print intensity to optimize printing of features such as barcodes or small text. See [Changing the print intensity](#) for details.

Working with Properties and Printing Preferences

Printer driver settings and data are organized in a set of dialog boxes or pages where settings for the printer are displayed and can be changed. The dialog boxes are organized differently for Windows Me and 98, Windows 2000, Windows XP, and Windows NT. Use the section that applies to the operating system you use.

The default printer name when the driver is installed is SmartDriver. References in this guide to the printer driver refer to the SmartDriver. The driver detects the type of printer attached and displays a status icon that matches the printer type.

Tips for Properties and Printing Preferences

- When it is installed, the SmartDriver printer driver uses default settings for the printer. Make sure that driver settings match printer features and supplies used.
- For settings that affect the printer, such as magnetic stripe settings, make sure that the printer and PC are connected so the value you select is sent to the printer and saved. (For settings that affect only the card format, such as landscape or portrait orientation, the printer does not need to be connected and powered on.)
- The Print Ribbon Type setting depends on the printer and cannot be changed.
- The card creation application might include settings that override driver settings. Also, you can access printer settings through the application's print feature. (Depending on the application and operating system, settings might apply only to the current document or session.)
- When the printer is installed, the default spool setting is "Spool printing so program finishes printing faster." Use this setting, not "Print directly to printer."
- When the printer is installed, "Enable bi-directional support" is selected. This setting is required to display messages, print test cards, and perform other functions.

Properties for Windows Me & 98

The Properties dialog box includes the following settings or data:

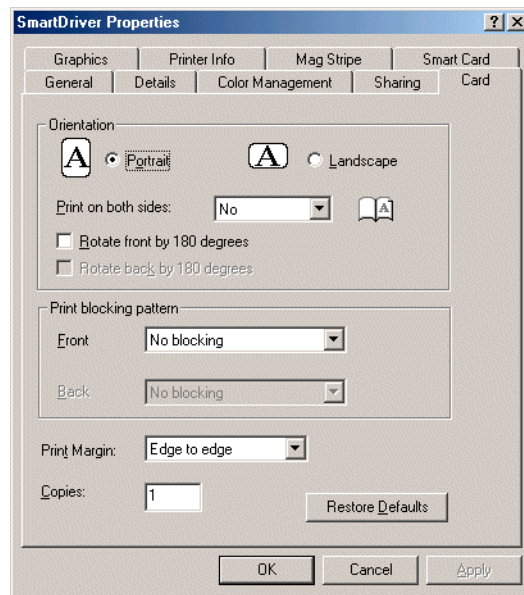
- Card design settings, such as landscape or portrait orientation and print blocking pattern
- Print ribbon type
- Magnetic stripe encoding formats and coercivity
- Data about the printer, including the printer type
- Port to which the printer is attached
- Port settings for a directly networked printer

Use the Properties dialog box

Make sure the printer power is on and the printer is connected to the PC.

- 1 Select Start from the Windows task bar.
- 2 From the Windows Start menu, select Settings and then Printers. The Printers window appears.
- 3 Click once on the SmartDriver icon.
- 4 Select File from the Printers menu bar, and then select Properties. The SmartDriver Properties dialog box appears.

- If you have the Printer Toolbox open, you can click the Properties button on the Status page to open the Properties dialog box. The General, Details, Color Management, and Sharing tabs are not displayed when you open Properties from the Printer Toolbox.



- 5 Select the tab with the information to view or change.
 - **General:** Shows the printer name and contains the Print Test Page button (sends a Windows test page)
 - **Details:** Shows the port to which the printer is connected, and includes the Port Settings button for setting up a directly networked printer
 - **Color Management:** Allows you to load a color profile (the printer does not include a color profile)
 - **Sharing:** Allows you set up the printer for sharing over a network
 - **Card:** Allows you to set the orientation, rotation, print blocking, print margin, and number of copies
 - **Graphics:** Shows the print ribbon type and allows you to set ribbon initialization (For K ribbons, you can choose the type of dithering to use. See [Set up for monochrome \(K\) printing](#) for details.)
 - **Printer Info:** Shows the printer type and the resettable card count. Includes the Open Printer Toolbox button and the About Driver button.
 - **Mag Stripe:** Shows whether a magnetic stripe option is included in the printer. If the printer includes a magnetic stripe module, you can set the Coercivity and Encoding Format. You can also enable Magnetic Stripe Escape Compatibility. (See [Magnetic Stripe Setup](#) for details.)
 - **Smart Card:** Shows whether a smart card option is included in the printer. There are no settings. (See [Smart card setup](#) for details.)
 - To view help for settings, click on the What's This help button and then click the setting.
- 6 If you make changes, click Apply to save the settings. When you are done, click OK to close the dialog box. If you do not want to make changes, click Cancel to close the Properties dialog box.

Properties & Printing Preferences for Windows 2000 & XP

The Properties dialog box includes the following:

- Printer type
- Port to which the printer is attached
- Permissions for other users of the PC

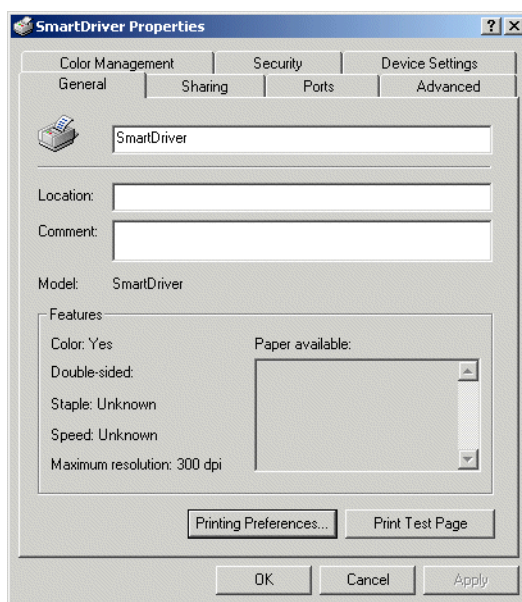
The Printing Preferences dialog box includes the following settings or data:

- Card design settings, such as landscape or portrait orientation and print blocking pattern
- Print ribbon type
- Magnetic stripe encoding formats and coercivity
- Data about the printer, including the printer type

Use the Properties dialog box

Make sure the printer power is on and the printer is connected to the PC.

- 1 Select Start from the Windows 2000 or XP task bar.
- 2 From the Windows Start menu, select Settings and then Printers (2000) or Printers and Faxes (XP). The Printers (and Faxes) window appears.
- 3 Click once on the SmartDriver icon.
- 4 Select File from the Printers menu bar, and then select Properties. The SmartDriver Properties dialog box appears.



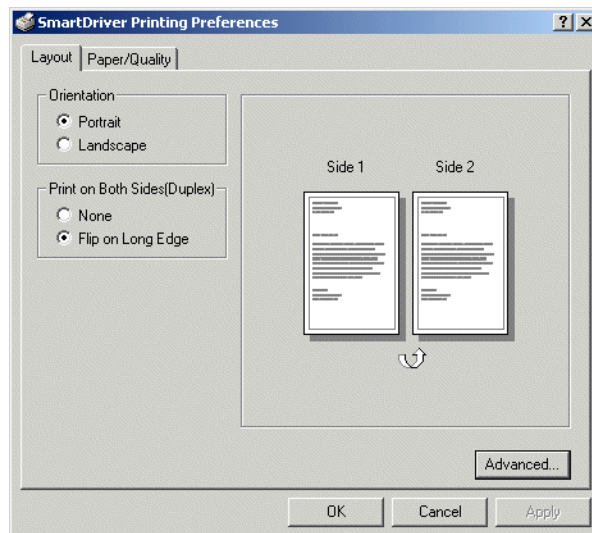
- To view help for the Properties dialog box, click on the help icon and then click the setting. Microsoft provides help for Properties dialog box.
- 5 Select the tab that contains the information you want to view or change.
 - **General:** Shows the printer name and contains the Print Test Page button (sends a Windows test page).
 - **Sharing:** Allows you set up the printer for sharing over a network.

- **Ports:** Shows the port to which the printer is connected, and includes the Port Settings button for setting up a directly networked printer.
 - **Advanced:** Contains the “Update Driver” button. Use the Datacard installation, not this button, to install a more recent printer driver
 - **Color Management:** Allows you to load a color profile (the printer does not include a color profile).
 - **Security:** Contains setting you use to grant or deny permissions to the printer for users of the PC.
- 6 If you make changes, click OK to save the settings and close the dialog box. If you do not want to make changes, click Cancel to close the Properties dialog box.
 - 7 If you change the port or change the printer name, reboot the PC before printing.

Use the Printing Preferences dialog box

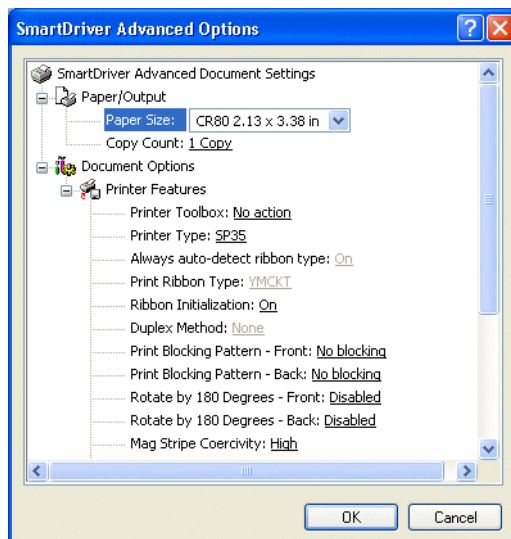
Make sure the printer power is on and the printer is connected to the PC.

- 1 Select Start from the Windows 2000 or XP task bar.
 - 2 From the Windows Start menu, select Settings and then Printers (2000) or Printers and Faxes (XP). The Printers (and Faxes) window appears.
 - 3 Click once on the SmartDriver icon.
 - 4 Select File from the Printers menu bar, and then select Printing Preferences. The SmartDriver Printing Preferences dialog box appears.
- If you have the Printer Toolbox open, you can click the Printing Preferences button on the Status page to open the Printing Preferences dialog box.



- 5 View or change settings.
 - If the setting you want to change appears, select the setting.
 - If the setting you want to change does not appear, click the Advanced button to display the Advanced Options dialog box.
 - Click the plus sign (+) to see all selections available.

- When you click a selection, a list of choices appears next to the selection. Click the arrow on the box to see the selections available.



- If the selections you want to use are not available (are grayed out), make sure the feature is available in the printer. Also make sure that the printer is powered on and connected to the PC, and then resume communication using the Printer Toolbox.
 - To view help for settings, click on the What's This help button and then click any setting in the Printer Features list. A list of settings is displayed. Select the setting for which you want help.
- 6 If you make changes, click OK on each dialog box to save the settings and close the dialog box. If you do not want to make changes, click Cancel to close the Advanced and Printing Preferences dialog boxes.

Changing the type of print ribbon

You can easily use a different type of print ribbon in the printer. (For example, you can change a color printer from YMCKT to monochrome (K) ribbon.) To use a different type of ribbon, do the following:

- 1 Make sure all cards from PCs attached to the printer have finished printing.
- 2 With the printer power on and the printer communicating with the PC, open the printer cover.
- 3 Remove the ribbon cartridge and remove the existing ribbon from the cartridge.
- 4 Load the new type of ribbon on the cartridge. Make sure the ribbon is Datacard-approved for use in the SP Series card printer you are using.
- 5 Replace the ribbon cartridge in the printer and close the cover. When you close the cover, the printer reads the type of ribbon installed and changes settings to match the current type of ribbon.
- 6 At each PC connected to the printer, make sure the printer and PC are communicating, and then open the Properties or Printing Preferences dialog box. View the Ribbon Type setting. The driver communicates with the printer to obtain the new ribbon type and will display the Ribbon Type. Close the dialog box when you confirm that the PC shows the new Ribbon Type setting. (At the client PC for a shared printer, you must change the setting.)
- 7 The PC is ready to send cards to the printer. Cards will be formatted to print with the new type of ribbon.

Set up for monochrome (K) printing

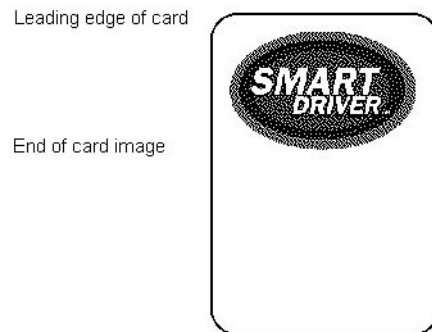
If you print with only one color, decide whether to perform the following setup tasks:

- Adapt your card design to use the ribbon saver feature
- Change the print intensity to optimize printing of features such as barcodes or small text.

Using Ribbon Saver

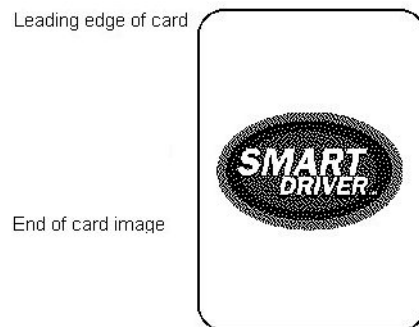
If you use a Datacard Black (K) monochrome ribbon, or a Datacard monochrome ribbon of another color, such as red, you can use the Ribbon Save feature. Without Ribbon Saver, the printer uses a length of ribbon that is about the same length as the card. With Ribbon Saver, the printer can use less ribbon if the card design does not occupy the complete length of the card.

The printer begins using ribbon at a location that corresponds to the leading edge of the card. With Ribbon Saver, the printer continues to spool ribbon for the length of the image but no farther. (The printer leaves a small margin between each card to avoid image overlap.)



Without Ribbon Saver, the printer spools ribbon for the length of the card.

You can adapt your card design to take advantage of the Ribbon Saver feature. For example, the following card does not make best use of the ribbon saver feature while the card shown above saves more ribbon.



Changing the print intensity

When you use Datacard monochrome ribbons, the printer identifies the ribbon and changes internal values for optimal printing of a range of card features. (For example, the printer uses slightly different values to print with black ribbon than with red ribbon.) However, your card requirements might be different. For

example, your card might include a barcode and you might want to change print intensity to produce the most readable barcodes.

Consider changing the print intensity in the following situations:

- You use infrared barcode readers. Barcodes often are most readable when printed with lower intensity.
- You print using a small font size. Small characters often print better when printed with higher intensity.
- The settings were changed previously and you want to return settings to the default.

See [Changing settings in the printer](#) for steps to follow.

Color settings

Use the Color Settings page to fine-tune the printed appearance of your cards. Color settings affect how the printer driver prepares card data to send to the printer, so the changes to color settings affect only the cards sent from the PC on which you make the changes.

Changing the color settings

Settings that you can change include brightness, contrast, sharpness, and the balance of red, green and blue. When you change color settings, all the colored features (such as photos, logos, and text) on the card change.

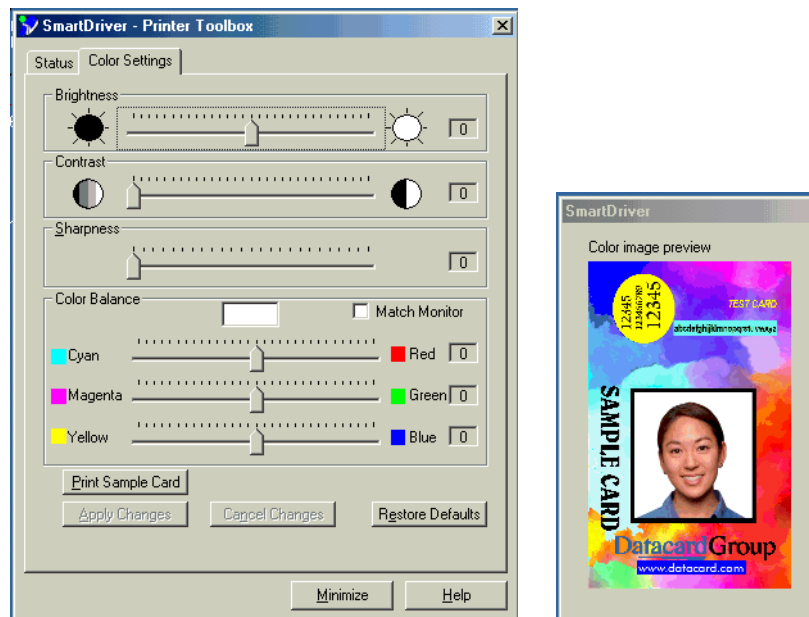
For some settings and operating systems, the brightness, contrast, and sharpness will affect dithered images. The following table indicates the operating systems and settings for which dithering can be affected:

Operating system	Dithering setting	Dithering affected?
Windows 98 or Me	Course	No
Windows 98 or Me	Error diffusion	Yes
Windows 2000 or XP	(not available)	Yes

You must change color settings at the PC sending the card. If a PC is connected to the printer through a network, changing color settings at the administrative or host PC will not change color settings at any client or user PCs.

Open the Color Settings page

- 1 Double-click on the printer Printer Toolbox icon. The Printer Toolbox appears.
- 2 Click the Color Settings tab to display the Color Settings page.



The page displays the current settings. For all settings, a value of 0 (zero) is equal to no change. The Color image preview pop-up also appears.

What should I do before changing color settings?

- 1 Set up your card design, using your card creation application. Make sure that you use all the data you plan to print in the design, such as a logo, a photo, text, and a barcode. You can use one sample card or a set (batch) of sample cards.
- 2 If you use photos, choose one or more photos that are similar to all the photos you plan to use.
- 3 Determine the priority and requirements for changing color settings. Color settings affect the complete card and cannot be used to change just one part of the card.
- 4 Consider the use of a graphics application to change one part of a card if needed. For example, if the color of the logo is not acceptable when the appearance of photos is best, consider changing the color of the logo using a graphics application.
- 5 Load the cards you plan to use in the card cartridge. Card stock can have a big impact on the appearance of printed cards.
- 6 Make one or more sample cards with the current settings. The card provides a way to record current settings and to evaluate the effect of changed settings. Do one of the following:
 - In the card creation application, send the sample card(s) to print.
 - Click the Print Sample Card button.
- 7 Use a permanent marker to mark the back of the card(s) with a **1** and the date. If you printed the sample card from the Color Settings tab, the current settings are printed on the card. If you printed the sample card from the card creation application, record all settings on the Color Settings page.

How do I choose the correct order for changing color settings?

- 1 First, decide whether you want to use the printer's color profile. The printer's color profile assumes colors on the cards are adjusted from the input device to the Windows default profile, and adjusts from the Windows profile to the printer's color profile.

To use the printer's color profile, check Match Monitor. (Most monitors do not use a color profile.)

- 2 Change the Brightness setting, if needed.
- 3 Change the Contrast setting, if needed.
- 4 Change the Sharpness setting, if needed.
- 5 Change the Color Balance settings, if needed.

How do I make photos brighter?

- 1 After making a sample card, click on the pointer in the Brightness box.
- 2 Drag the slider to the new position.
- 3 Wait a moment while the Color Image Preview changes to show the effect of the new setting.
- 4 If preview shows the change you want, click the Apply Changes button. If not, return to step 2.
- 5 Print a sample card, using the same method as you used in [What should I do before changing color settings?](#)
 - In the card creation application, print one or more sample cards.
 - Click the Print Sample Card button to print a card.
- 6 Use a permanent marker to mark the back of the card with a 2 (or the next number if repeating these steps).
 - If you printed the sample card from the Color Settings tab, the current settings are printed on the card.
 - If you printed the sample card from the card creation application, record the new Brightness setting on the card.
- 7 Evaluate the appearance of the sample card(s).
 - If the brightness is decreased all the way, the white color in a card might become slightly darker.
- 8 Repeat these steps until the sample cards meet your requirements.

How do I change the contrast?

- 1 After making a sample card, click on the pointer in the Contrast box.
- 2 Drag the pointer to the new position. Move to the right to increase the contrast.
- 3 Wait a moment while the Color Image Preview changes to show the effect of the new setting.
- 4 If preview shows the change you want, click the Apply Changes button. If not, return to step 2.
- 5 Print a sample card. (Use the same method as you used in [What should I do before changing color settings?](#))
 - In the card creation application, print one or more sample cards.
 - Click the Print Sample Card button to print a card.

- 6 Use a permanent marker to mark the back of the card with a **2** (or the next number if repeating these steps).
 - If you printed the sample card from the Color Settings tab, the current settings are printed on the card.
 - If you printed the sample card from the card creation application, record the new Contrast setting on the card.
- 7 Evaluate the appearance of the sample card(s).
- 8 Repeat these steps until the sample cards meet your requirements.

How do I make the dark colors darker and the light colors lighter?

- 1 After making a sample card, click on the pointer in the Contrast box.
- 2 Drag the slider to the new position. Move it to the right to increase the difference between light and dark colors.
- 3 Wait a moment while the Color Image Preview changes to show the effect of the new setting.
- 4 If preview shows the change you want, click the Apply Changes button. If not, return to step 2.
- 5 Print a sample card, using the same method as you used previously.
 - In the card creation application, print one or more sample cards.
 - Click the Print Sample Card button to print a card.
- 6 Use a permanent marker to mark the back of the card with a **2** (or the next number if repeating these steps).
 - If you printed the sample card from the Color Settings tab, the current settings are printed on the card.
 - If you printed the sample card from the card creation application, record the new Contrast setting on the card.
- 7 Evaluate the appearance of the sample card(s).
- 8 Repeat these steps until the sample cards meet your requirements.

How do I make the printed cards less fuzzy?

- 1 After making a sample card, click on the pointer in the Sharpness box.
- 2 Drag the slider to the new position. Drag the slider to the right to increase sharpness.
- 3 Wait a moment while the Color Image Preview changes to show the effect of the new setting.
- 4 If preview shows the change you want, click the Apply Changes button. If not, return to step 2.
- 5 Print a sample card, using the same method as you used previously.
 - In the card creation application, print one or more sample cards.
 - Click the Print Sample Card button to print a card.
- 6 Use a permanent marker to mark the back of the card with a **2** (or the next number if repeating these steps).
 - If you printed the sample card from the Color Settings tab, the current settings are printed on the card.

- If you printed the sample card from the card creation application, record the new Sharpness setting on the card.
- 7 Evaluate the appearance of the sample card(s).
- 8 Repeat these steps until the sample cards meet your requirements.

How do I improve the color of my logo?

- 1 Evaluate the problem, such as “The logo has a yellow cast” or “The logo is reddish.”
If most of the card prints with the correct colors, consider using a graphics application to change the logo or other part of the card that needs color improvement.
- 2 After making a sample card, click on the pointer for the color that is a problem.
- 3 Drag the pointer to the new position.
- 4 If changing the color that appears to be a problem does not fix the situation, try changing the other two colors. For example, if the logo is too red, try changing green and blue to bring red into balance.
- 5 Wait a moment while the Color Image Preview changes to show the effect of the new setting.
- 6 If preview shows the change you want, click the Apply Changes button. If not, return to step 2.
- 7 Print a sample card, using the same method as you used previously.
 - In the card creation application, print one or more sample cards.
 - Click the Print Sample Card button to print a card.
- 8 Use a permanent marker to mark the back of the card with a **2** (or the next number if repeating these steps).
 - If you printed the sample card from the Color Settings tab, the current settings are printed on the card.
 - If you printed the sample card from the card creation application, record the new Color Balance settings on the card.
- 9 Evaluate the appearance of the sample card(s).
 - If the color balance is increased all the way, the white color in a card might become slightly darker.
- 10 Repeat these steps until the sample cards meet your requirements.

How do I make my photo colors more lifelike?

- 1 After making a sample card, click on the pointer in the Contrast box.
- 2 Drag the slider to the new position.
- 3 Wait a moment while the Color Image Preview changes to show the effect of the new setting.
- 4 If preview shows the change you want, click the Apply Changes button. If not, return to step 2.
- 5 Print a sample card, using the same method as you used previously.
 - In the card creation application, print one or more sample cards.
 - Click the Print Sample Card button to print a card.
- 6 Use a permanent marker to mark the back of the card with a **2** (or the next number if repeating these steps).

- If you printed the sample card from the Color Settings tab, the current settings are printed on the card.
 - If you printed the sample card from the card creation application, record the new Sharpness setting on the card.
- 7 Evaluate the appearance of the sample card(s).
 - 8 Repeat these steps until the sample cards meet your requirements.

How do I undo color changes?

- 1 If you want to remove all color changes and set all controls to 0, click the Restore Defaults button.
- 2 Click the Apply changes button.
- 3 You will use the default color settings.

How do I use a different color profile?

You must have another color profile to use.

- 1 Make a sample card. The card provides a way to record current settings and to evaluate the effect of changed settings. Do one of the following:
 - In the card creation application, send the sample card(s) to print.
 - Click the Print Sample Card button.
- 2 Open the Printer Toolbox.
- 3 Click the Color Settings tab and make sure the Match Monitor setting is clear.
- 4 Click the Apply Changes button.
- 5 Print a sample card. (Use the same method as you used in step 1.)
 - In the card creation application, print one or more sample cards.
 - Click the Print Sample Card button to print a card.
- 6 Use a permanent marker to mark the back of the card with a **2** (or the next number if repeating these steps) and “Uncheck Match Monitor.”
- 7 Use the Color Management Tab of the Printer Properties dialog box to load a color profile. See Windows Help for more information.
- 8 Continue with changing any other color settings.

Changing settings in the printer

This section describes the settings in the printer that you might want to change. These settings can be used to customize the performance of the printer to meet the demands of your card design.

Tips for success

- You must use a PC to which the printer is directly connected to change operational settings (locally attached or directly networked). You cannot change operational settings from a client PC using shared printing.
- Your service provider can guide you in making settings that will meet your specific needs.
- Printer settings should be changed only by someone familiar with the operation of the printer and with Windows. Allow enough time to perform all steps of the procedures to achieve the card quality desired.
- If this information does not result in the print quality that you want, contact your service provider for assistance.

You can work with the following settings:

- **Printing intensity:** You can fine-tune the appearance and function of cards you print by changing the intensity used to print black (K) and topcoat (T) panels. Intensity affects the thickness of letters and barcodes—higher intensity prints thicker letter or barcodes. Use the Printhead tab of the Printer Toolbox to change the printing intensity.
- **Fine-tune edge-to-edge printing:** You can change where the printing is positioned on the card. When you select “Edge to edge” as the Print Margin value, you should set the Leading Edge for best appearance and smooth operation. (Print Margin is set in the Properties, Document Default Properties, or Printing Preferences dialog box.) You can also change the position of printing to address card quality concerns. Use the Edge to edge tab of the Printer Toolbox to fine-tune where printing occurs on the card.

Process for changing settings

This section contains several procedures which help you make specific changes to settings. All of the procedures use the following basic steps. This overview can help you prepare for the specific processes that follow.

Materials to use

- Blank cards, for making “test cards” before and after changing settings. If you will be making printer test cards and the printer includes a magnetic stripe module, make sure the magnetic stripe test cards and the printer have the same coercivity.
- Permanent marker (for recording data on cards) or a pen (if you record data on paper).
- Paper and tape, if you want to create log pages. A log page has “test cards” taped to it with corresponding data (such as setting values) written on the page. Only one side of the card is visible when it is taped to the log page, but you can write more information on a log page than on a test card or sample card.

Suggested process

- 1 Make sure the printer is powered on and is directly connected to the PC.
- 2 Identify the setting to change and the result you want. (Stating the desired result in a measurable way can help you identify when you have met your goal.)

- 3 Make a test card (or sample card) and record the current values for the setting to change. Also record the date and sequence number (beginning with 1). Use the same test or sample card at each step.
- 4 Change the setting and apply the change.
- 5 Make another test or sample card. Record the new setting and sequence number.
- 6 Evaluate the result on the card.
 - If the result meets the goal, you have completed the process.
 - If the result does not meet the goal, return to step 4. Repeat steps 4, 5, and 6 until you meet the stated goal.
 - If you have repeated the steps several times but are not making progress toward the stated goal, consider whether the goal is possible and whether changing this setting will lead to the goal. Return to the settings recorded in step 1.

Change printing intensity

- 1 Make sure the Printer Toolbox is open. Double-click on the icon in the system tray if needed.
- 2 Select the Advanced Setup button on the Printer Toolbox.
 - The printer driver changes from printing mode to Advanced Setup mode, and additional tabs appear on the Printer Toolbox.
- 3 Click the Printhead tab to display the Printhead page.
 - The driver obtains the values from the printer when the window opens. If the values were not available and the “Printer not responding” message appears, click the Retry button. The printhead values must be available to continue.
- 4 Click the Printer Test Card button to print a test card that serves as a baseline for the changes you make.
- 5 Mark the back of the test card with “1” and the intensity setting that you plan to change. For example, mark it “1-K 0” if you plan to change the intensity for black (K) and the current value is 0.
- 6 To change the printhead intensity:
 - a Select the panel type: K for monochrome ribbon or panels; T for the topcoat panel.
The slider moves to the location that matches the current value and the current value appears.
 - b Move the slider:
 - You can use the mouse or the arrow keys (← →) to move the slider.
 - Move to the right to increase the intensity. Printing on the card will appear darker. If you selected the topcoat panel type, the degree of coverage increases. If intensity is too high, the print ribbon will wrinkle or break (or both), especially at the end of a panel.
 - Move to the left to decrease the intensity. Colors on the card will appear lighter and ribbon is less likely to break.
 - Decrease the intensity for the topcoat only if the ribbon is melting when applying the topcoat. Decreasing the intensity reduces the degree of coverage of the topcoat. Topcoat can affect the durability of the image, and the degree of coverage can be difficult to detect.
 - c Select the Apply Changes button to make the values take effect in the printer, OR select the Cancel Changes button to return to the values displayed before you used the slider.

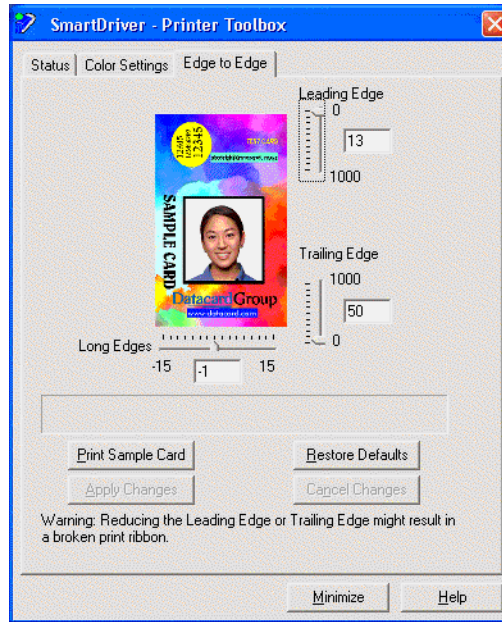
- The “Changes saved to printer” message appears when the values have been saved to the printer.
- 7 Select the Printer Test Card button.
 - 8 Mark the card on the back with a 2 (or the next number if repeating these steps) and the new settings (such as K -20 for K intensity).
 - 9 Evaluate the result as shown on the printed card.
 - If the new setting has solved the problem, you can select another value to change or quit Advanced Setup.
 - If the new setting has not solved the problem, return to step 5 and repeat the process.
 - If the new setting has made the problem worse, return to step 6 and move the slider to the intensity value for the selected panel type written on card 1.
 - 10 When you are done running Advanced Setup, select the Status tab and then the Quit Advanced Setup button to enable printing.

If you have entered Advanced Setup and selected the Close button in any tab of the Status dialog box, the driver quits Advanced Setup for you.

Fine-tune edge-to-edge printing

Tips for success

- Make small changes in settings to avoid breaking the print ribbon.
 - You can use the mouse or the arrow keys (< >) to move the slider.
 - If you have selected “Edge to edge” as the Print Margin value and you are changing the Leading Edge or Trailing Edge setting, watch for print ribbon break messages. If you change these settings too much, the print ribbon might break as a result. If so, return to a setting that does not break the ribbon.
 - If you have changed both Leading Edge and Trailing Edge settings and the ribbon breaks, you can determine the setting that is probably causing the break by looking at where the ribbon is broken. Change the Leading edge setting if the break is at the beginning of a ribbon panel. Change the Trailing Edge setting if the break is near the end of a ribbon panel.
 - If you install a new printhead, you can change the Long Edges setting to center printing on the card.
- 1 Make sure the Printer Toolbox is open. Double-click on the icon in the system tray if needed.
 - 2 Select the Edge To Edge tab on the Printer Toolbox.
 - 3 Click the Print Sample Card button to print a card that serves as a baseline for the changes you make.
 - 4 Mark the back of the card with “1.” Also mark the position change you plan to make. Finally, mark the current values, such as 13/50/-1 for the Leading Edge, Trailing Edge, and Long Edges values.
 - 5 Select and move the slider for the setting you want to change.



- 6 Select the Apply Changes button to make the values take effect in the printer, OR select the Cancel Changes button to return to the values displayed before you used the slider.
 - The “Changes saved to printer” message appears when the values have been saved to the printer.
- 7 Select the Print Sample Card button.
- 8 Mark the card on the back with a 2 (or the next number if repeating these steps) and the new settings (such as 18/50/-1).
- 9 Evaluate the result as shown on the printed card.
 - If the new setting has solved the problem, you can select another value to change or be done.
 - If the new setting has not solved the problem, return to step 5 and repeat the process.
 - If the new setting has made the problem worse, return to step 5 and move the slider to the value for the print position written on card 1.

Magnetic Stripe Setup

Do the following to set up the printer and driver to encode magnetic stripes on cards:

- Use cards with magnetic stripes when making a printer test card.
- Identify the encoding format and how it will be formatted (by the application, using magnetic stripe fonts, or using escape codes).
- Determine whether to send coercivity and encoding format data with each card or whether to set values in the printer. Choose the "Use printer settings" in the Properties or Printing Preferences dialog box if you set values in the printer (using Diagnostics).
- Determine the coercivity to use. Usually, the coercivity is a system-wide decision: The magnetic stripe readers which will read the cards encoded by the printer are likely to require a specific coercivity value. Card stock is purchased to match that coercivity value. Set the coercivity in the Properties or Printing Preferences dialog box.
- Select the encoding format. If a custom format, such as Triple-IATA, is used, choose "Use Printer Coercivity" in the printer driver.
- Determine the order for encoding the magnetic stripe and printing. Typically, the magnetic stripe is encoded first and then the card is printed. In some cases, a card design works most efficiently when the magnetic stripe data is encoded, and then the reverse side of the card is printed (a duplex module is required to use this feature). The "Print and Encode Sequence" choices allow you to choose which way to process cards. If you choose to encode first, be sure to load cards with the magnetic stripe up and toward the right side of the printer.
- If you will encode cards only, choose the Mag Stripe Encode Only selection in Properties or Printing Preferences. Also make sure that you have not chosen duplex printing (print on both sides) and do not apply topcoat (using settings in Properties or Printing Preferences).
- The following table lists formatting choices available and provides information about setup:

Format	Printer Module	Data formatted by	Data verified by	Driver format setting	Use Diagnostics?
IAT	Three track (IAT)	ID Works	ID Works/Driver	No effect	No
		Magnetic Stripe Fonts (includes Preface)	Printer	IAT	No
		Escape Codes	Printer	IAT	No
NTT	Single-track (NTT)	ID Works	ID Works/Driver	No effect	Coercivity
		Magnetic Stripe Fonts (includes Preface)	Printer	NTT	Coercivity
Triple IATA	Three-Track (IAT) Single Track (NTT)	ID Works	ID Works/Driver	No effect	Yes
		Magnetic Stripe Fonts (includes Preface)	Printer	Use printer settings	Yes
		Some Escape Code Formats	Printer	Use printer settings	Yes

Format	Printer Module	Data formatted by	Data verified by	Driver format setting	Use Diagnostics?
Proprietary	Three-Track (IAT)	ID Works	Printer	Use printer settings	Yes
		Magnetic Stripe Fonts	Driver	Use printer settings	Yes
		Custom Application	Application	Use printer settings	Yes
Custom	Three-Track (IAT) Single Track (NTT)	Custom Application	Application	Binary or Use printer settings	Optional
		Magnetic Stripe Fonts (includes Preface)	--	Binary or Use printer settings	Optional
Binary	Three-Track (IAT)	ID Works	ID Works	Binary	No
		Custom Application	Application	Binary	No

Tips for success

- If you plan to use a custom magnetic stripe format, your service provider or value-added reseller (VAR) must make changes to printer settings to set up a custom magnetic stripe format. Follow the guidance of your service provider or VAR when using a custom magnetic stripe format.
- Proprietary formats, used for applications such as driver's licenses or hotels, can be used with the SP Series printers. Obtain the guidance of your service provider or (VAR) when using proprietary formats.
- On Windows 98 and Me, data formatted with magnetic stripe fonts or escape codes cannot be located in rotated fields.

Magnetic stripe escapes

Customers have the ability to use magnetic stripe escape codes with the SmartDriver, version 5.0 and higher, and the SP Series printer. Magnetic stripe escape codes are used by card printers from several other manufacturers. To support existing custom applications, Datacard has implemented magnetic stripe escapes. To use magnetic stripe escapes with the SmartDriver, a custom application must send data to the driver, not directly to the printer. Magnetic stripe escapes can also be used when an application cannot format magnetic stripe data and when the application does not allow you to select the SmartDriver's magnetic stripe fonts for formatting magnetic stripe data.

Magnetic stripe escapes are most commonly used for the IAT format, which encodes IATA (International Air Transport Association) data on Track 1, ABA (American Banker's Association) data on Track 2, and TTS (Thrift Third Shift) data on Track 3. Other card printer manufacturers sometimes refer to this format as ISO format. Using information in this section, you can also use magnetic stripe escapes to encode variations to the IAT format.

Enabling magnetic stripe escapes

The SmartDriver includes a setting to enable magnetic stripe escapes. Enable magnetic stripe escapes on each PC that will use magnetic stripe escapes to send data to a printer. Also, enable magnetic stripe escapes for each printer attached to a PC if you will send magnetic stripe data to the printer.

To enable magnetic stripe escapes, do the following:

- 1 Make sure the printer power is on and the printer is connected to the PC. Also make sure the driver is installed on the PC and communicates with the printer.
- 2 Select Start from the Windows task bar.
- 3 From the Windows Start menu, select Settings and then Printers. The Printers window appears.
- 4 Click once on the SmartDriver icon.
- 5 Select File from the Printers menu bar, and then:
 - For Windows 9x, select Properties. The SmartDriver Properties dialog box appears.
 - For Windows 2000 and XP, select Printing Preferences. On the Printing Preferences dialog box, click Advanced to display Advanced settings.
 - If you have the Printer Toolbox open, you can click the Properties (9x), Printing Preferences (2000 and XP) button on the Status page to open the Properties or Advanced dialog box.
- 6 Locate the Mag Stripe Escape Compatibility setting.
 - On Windows 9x, choose the Mag Stripe tab.
 - On Windows 2000 and XP, scroll through the settings list to locate the Mag Stripe Escape Compatibility setting.
- 7 Choose Enabled for the setting.
- 8 Locate the Mag Stripe Encoding Format setting.
 - If you will encode IAT (ISO) format, choose IAT for the format.
 - If you will encode a variation to IAT (ISO) format, choose "Use printer settings" for the format.
- 9 Click Apply or OK to save the settings and close the dialog box.

You do not need to specify which syntax or manufacturer's escape sequence you will use. When you enable Mag Stripe Escape Compatibility, the SmartDriver will recognize any of the escape character sequences listed in this section.

Using magnetic stripe escapes

To use magnetic stripe escapes, do the following:

- Use an application in which you can enter and save text, and then edit it after saving.
- Before the magnetic stripe data, provide the escape sequence, such as ~1 or ~1% . The rest of the line of text will be encoded, up to an End Sentinel (if the syntax uses one).
- Use a Return or Enter keystroke to end a line.
- Do not allow text to wrap to two lines. The text on the following line will print on the card.
- You might be able to send two lines of text to one track. Each line of text must begin with the escape sequence. Test cards made with this method to see whether the lines are encoded in the order in

which the lines appear on the page. Some applications do not support this method or produce unpredictable results.

- Text to print can be on the same line as data to encode, but must be located before the escape sequence.
- Only one track can be encoded per line of text.
- Magnetic stripe data will be converted to uppercase (capital) letters if necessary.
- If you include not-allowed characters within the magnetic stripe data, the printer will beep and a message will be displayed on the PC.
- The driver does not check the data you send. (The printer checks the data.) This is the same behavior as magnetic stripe fonts.

On Windows 98, 98 SE, and Me, data formatted with escape codes cannot be located in rotated fields.

Printer Manufacturer	Encoding Format	Syntax	Example
Eltron	IAT (ISO)	~<track#><data>	~1ENCODING WITH ESCAPES ~21234567890 ~31234567890
Atlantek	IAT (ISO)	~<track#>=<data>	~1=ENCODING WITH ESCAPES ~2=1234567890 ~3=1234567890
Fargo	IAT (ISO)	~<track#>(Start Sentinel)<Data> <End Sentinel>	~1%ENCODING WITH ESCAPES? ~2;1234567890? ~3;1234567890?
Datacard HiFX	IAT (ISO)	~<track#>(Start Sentinel)<Data> <End Sentinel>	~1%ENCODING WITH ESCAPES? ~2;1234567890? # ~3;1234567890? #
Victor Data Systems	IAT (ISO)	~<track#>(Start Sentinel)<Data> <End Sentinel>	~1%ENCODING WITH ESCAPES? ~2;1234567890? # ~3;1234567890? #

#. Only the default start sentinel, a semicolon (;), is permitted.

For information about the characters allowed for each track format, see the following section. For more information about requirements for using escapes, see the documentation for the original printer.

IATA, ABA, and TTS character sets

The IAT encoding format selection for the SP55 printer encodes IATA data on track 1, ABA data on track 2, and TTS data on track 3. This meets the requirements of the ISO standard.

IATA (International Air Transport Association)

The maximum field length for IATA format is 76 characters. IATA allows spaces, upper case alphabetic characters, numeric characters, and the following special characters:

! # \$ % ' () * + , - . / ; : < @ > = ^] \ [" & _

ABA (American Bankers Association)

The maximum field length for ABA format is 37 characters. ABA allows numeric characters and the following special characters:

; < = >

TTS (Thrift Third Standard)

The maximum field length for TTS format is 104 characters. TTS allows numeric characters and the following special characters:

; < = >

NTT character set

The maximum field length for NTT (Nippon Telephone & Telegraph) format is 69 characters. NTT allows spaces, numeric characters, upper case alphabetic characters, lower case alphabetic characters, and special characters. From a PC running a Japanese edition of a supported Windows operating system, NTT also supports 55 Katakana characters.

The special characters include:

! " # \$ % & ' () * + , - . / : ; < = > ? @ [] ^ _ ` { | } ~

and the following Japanese-language special characters: (a Japanese edition of a supported Windows operating system is required.)

。 『 』 、 ・ ー ・ ・

The 55 Katakana characters include the following 45 Katakana characters:

アイウエオ
カキクケコ
サシスセソ
タチツテト
ナニヌネノ
ハヒフヘホ
マミムメモ
ヤ ュ ヨ
ラリルレロ
ワ ン

and the following 10 Katakana characters:

フ アイウエオヤユヨツ

Each time you start using Japanese-language characters, or stop using them, the driver adds a hidden character. Each hidden character reduces by one the number of characters you can encode.

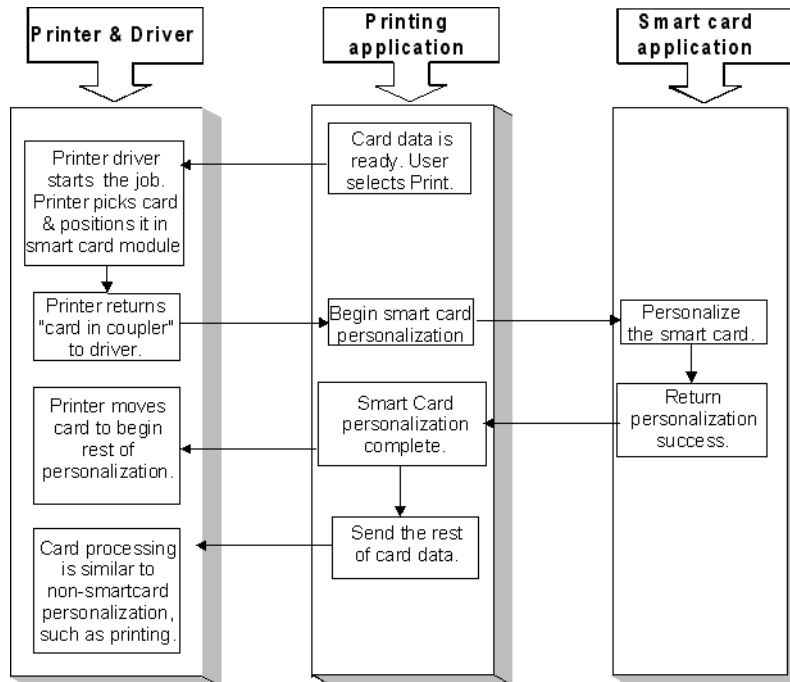
Magnetic Stripe settings used by the printer

The following table presents technical details that apply to encoding magnetic stripe data.

	IATA	ABA	TTS	NTT	Binary
Character Differential	32	48	48	0	0
Start Sentinel (SS) (ASCII character)	% (37)	; (59)	; (59)	127	None
End Sentinel (ES) (ASCII character)	? (63)	? (63)	? (63)	127	None
Lowest ASCII Character	space (32)	0 (48)	0 (48)	(1)	0
Highest ASCII Character	_ (95)	? (63)	? (63)	(126)	255
Character-level parity (VRC)	Odd	Odd	Odd	Even	None
Cumulative parity (LRC)	Even	Even	Even	Even	None
Density in bits per inch	210	75	210	210	210
Data bits per character	6	4	4	7	8
Maximum number of encodable characters (not including start and end sentinel or LRC)	76	37	104	69	33
Encoding direction	SS first	SS first	SS first	SS last	SS first

Smart card setup

This section presents information about how to set up a system if you are personalizing smart cards. Smart card processing is different from other types of personalization, because the “smart card” step of personalization is controlled by an application (or application module) that is different from the rest of card personalization.



The data for smart card personalization is sent from the smart card application using a separate smart card cable.

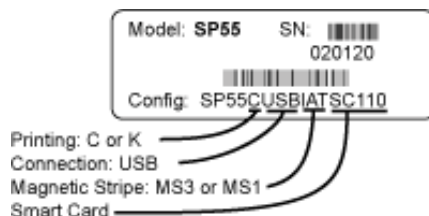
Requirements

To personalize a smart card, you need to obtain or create the following:

- A direct local connection between the printer and the PC
- Smart card module in the printer OR a contact station in the printer plus an external coupler
- A smart card cable for each smart card port used
- Card application that is customized to work with the SP Series printer and the smart card application (using the SmartDriver SDK or an application such as ID Works with the Smart Card Application Manager)
- Smart card application (which uses the SDK for the smart card and coupler type)
- Smart cards that work with the coupler in the printer

Smart card codes on the printer label

The printer label includes codes to identify the type and model of smart card module installed in the printer. The model(s) of coupler available might change and additional models might become available. (SP55 printers might have identifiers that describe the coupler, such as SC430.)



If the printer contains a smart card module, the printer label will include "SC" and three numbers. Each digit in the number represents a different part of the code. The following table lists the codes used on the printer label.

Code	First digit	Second digit	Third digit
SC1n0	1=contact coupler	1=GemPC 430 2=GemPC USB 3=GemPC Serial	0=no contactless
SC20n	2=contactless (RF) coupler	0=no contact	1=GemPlus 680 2=HID 3=Casi 4=Indala
SC3nn	3=combo coupler	1=GemPC 430 2=GemPC USB 3=GemPC Serial	1=GemPlus 680 2=HID 3=Casi 4=Indala
SC400	4=contact station	0=no contact	0=no contactless

If the codes on your printer label do not match any codes presented in this section and you do not know the type of smart card module installed in the printer, contact your service provider who can obtain the most recent codes from the Partner Page.

Obtaining smart card support files

Tips for success

- Typically, the developer of the smart card application will download smart card support files and provide them as part of smart card installation and setup.

Obtain files to support the module:

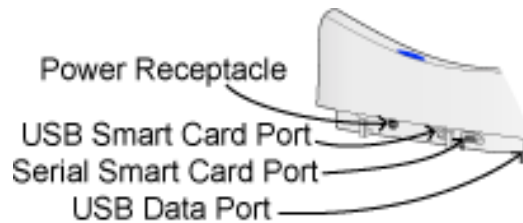
- If the coupler name includes "GemPC," go to the Gemplus Web site at www.gemplus.com to obtain files. Choose the Support area of the Gemplus Web site, and then downloads for PC-Link readers. Choose the reader installed in your printer and the operating system used by the PC, and download the files. Also download or print the readme.txt file that applies to your reader and operating system. See [Hardware set up](#) for installation.
- If the coupler is a 680, files to support a contactless reader are available from the Products area of the Gemplus Web site at www.gemplus.com. Select the GemEasyLink680 product, and then go to Development Downloads to obtain files. The zip file you download will include instructions. See [Hardware set up](#) for installation.
- You can also download the Gemplus SmartDiag utility.

- If the coupler type is HID, Casi, or Indala, the files to support the reader are installed by Windows. For Windows 2000, Me, and 98SE, use the Windows installation CD-ROM to install the files. (Windows XP includes the files on the PC.) Use the RF IDEas CD-ROM provided with the smart card module which contains the configuration utility to complete setup.
- If a contact station is installed, obtain driver files from the supplier or manufacturer.
- If the printer has a combo smart card module, obtain files for each type of coupler included.

Hardware set up

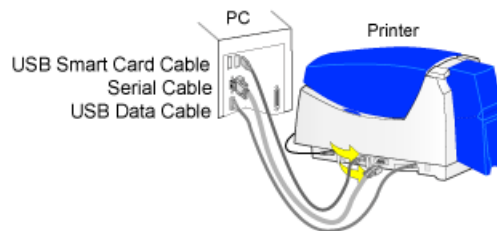
Make sure the printer driver has been installed and that the printer produces a sample card before setting up the smart card module.

A printer with a smart card module has one or two additional ports.



- If the printer has a USB smart card port, follow these guidelines:
 - The USB cable must be a type CM 30V cable, up to a maximum of 6.5 feet or 2 meters long. A longer cable might result in electrical interference.
 - Datacard recommends that you connect a smart card port directly to the PC port (without using other USB devices, which might permit access to the smart card data).
 - The Windows XP operating system includes support for contact smart card modules and for HID, Casi, and Indala contactless modules. The files will be installed automatically when you connect the USB smart card port to the PC. More recent files for GemPC couplers are available from Gemplus. Install the files from Gemplus after Windows installs the device.
 - If you plug in the smart card USB port instead of the printer data port when installing the printer, the Add/Detected New Hardware wizard appears, naming the coupler as the hardware it found. For Windows XP only, allow the wizard to complete and then connect the USB data cable to the USB port closest to the input hopper to install the printer on the PC.
 - For Windows Me and 98SE and HID, Casi, and Indala readers, use the Windows installation CD-ROM to install contactless couplers that use a USB port.
 - For Windows Me, 2000, and 98SE and contact couplers, use the downloaded files from Gemplus to install the drivers, not the Add/Detected New Hardware Wizard. Restart Windows before you use the coupler.
 - If the printer includes two smart card modules that use a USB port, the port will be connected to an internal hub. Make sure you have the files (described above) for both devices before you connect the smart card USB port and the PC. When you connect the smart card USB port and PC, the PC will identify two new devices and might display two Found New Hardware Wizards. Use only one wizard at a time and follow the guidelines above to install each type of coupler.
- If the printer has only a serial smart card port, you can connect the hardware before installing files to support the smart card.

- The smart card serial cable must be a shielded DB9 serial cable, up to a maximum of 9.8 feet or 3 meters long.
- For a 680 coupler, double-click the downloaded file to view the files available. Follow the instructions in the downloaded file to install a reader on the PC. You do not need to install the complete API.
- If the printer includes both a smart card USB port and a smart card serial port, the printer includes both a contact coupler and a 680 reader. Install files for both devices and use two smart card cables.



Verify Windows installation of a smart card module

Verify that the driver files for the smart card coupler(s) are installed correctly on the PC and that Windows can communicate with the coupler.

- Check the Windows Device Manager to verify that the device is installed:
 - A contact smart card module will appear as an entry under “Smart Card Reader.”
 - If the contact reader appears as an entry under “Other devices” the device is not installed correctly. For Windows Me and 98 SE, restart Windows to enable device installation.
 - A contactless smart card module is likely to appear as a Keyboard or a Human Interface Device.
 - A 680 contactless module does not appear in the Device Manager list.
- To verify the installation of Gemplus smart card driver files, use the Gemplus SmartDiag utility, which is available from the GemPlus web site.
- SmartDriver Diagnostics, which you can install using the SmartDriver CD-ROM, include the ability to test some types of smart card couplers.
- To verify the installation of HID, Casi, or Indala readers, install and use the configuration utility on the RF IDEas CD-ROM.

Tips for success

- Cards-per-hour ratings do not apply. The smart card personalization process requires dwell time that is controlled by the personalizing application, not the printer and driver.
- The Retry button on message boxes is not available. The personalizing application can control messages, and so some printer messages might not be displayed.

Card production and system maintenance

After the printer, driver, card creation application, and capture system are set up, you are ready to produce cards. To assure that you produce cards that meet requirements, be familiar with how to make cards. In addition, invest small amount of time to care for the equipment you use to print cards.

Card Production

To use a **card creation application**, such as Datacard's ID Works™ or Preface™:

- 1 Follow instructions for the card creation application to capture, format, and save the card data.
- 2 In the card creation application, send cards to the printer (usually, use the Print button).

The printer driver receives and processes card data, places cards in a queue, and sends the next card to the printer.

To use a **PC application** such as Microsoft Word:

- 1 In the application, select the SmartDriver as the current printer. (Your printer might have a different name.)
- 2 Select the printer settings that correspond to the cards. See [Setting up for the card design](#) for details.
- 3 In the application's page setup feature, set the paper size to CR80 Card 2.13" x 3.38" and set the margins to match the driver.
- 4 Format the text to print using TrueType fonts. Text formatted as Black will print using the K (solid black) ribbon panel. All other colors are printed using the color panels (if you use a color print ribbon).
- 5 To encode magnetic stripe data, do one of the following:
 - a Type the magnetic stripe data on the front of the card and format the text using one of the following fonts:
 - Track 1—Magnetic Stripe
 - Track 2—Magnetic Stripe
 - Track 3—Magnetic Stripe
 - Track NTT—Magnetic Stripe (PC must run a Japanese language Windows operating system)
 - b If your application does not allow you to select fonts, use magnetic stripe escapes to identify data. See [Magnetic stripe setup](#) for details.
- 6 When the card data is ready, select Print to send the card to print. The printer driver receives and processes card data, places cards in a queue, and sends the next card to the printer.

Tips for success

- Developers can write applications using the SmartDriver™ Software Developer's Kit. This kit can be downloaded from www.datacard.com.
- If you use magnetic stripe fonts or escapes, keep data for one track in one line of text, and only have magnetic stripe data on the line. (Use a small font size if needed.)
- Do not use character formatting (such as kerning) or formatting characters (such as tabs) with data intended for magnetic stripe encoding.
- Whenever you encode magnetic stripe data or program smart cards, the card can include confidential data that you cannot see. In addition, used print ribbon contains negative images of data printed on cards. Handle used print ribbon and incomplete cards according to your policy for handling the confidential data that might be on the card.
- For the most current information about messages, see the online help for each message.

Responding to messages

The printer and driver generate a message on the PC when a card cannot be processed. Usually, the message is displayed on the PC.

- 1 When a message is displayed on the PC, follow the suggested action. Click the Help button to see likely causes and possible solutions.
- 2 When the printer status light blinks amber, it is safe to open the printer to fix any problems.
- 3 Fix the problem, then close the printer cover and press to latch it.
- 4 The message box might disappear on its own or you might need to click a button.

Buttons on the message box can be:

Retry: Clears the card. The driver sends the card or cards to the printer again. If the problem is fixed, normal operation resumes.

Cancel: Clears the card. The driver does not send the card again. If the problem is fixed, normal operation resumes.

OK: Used for a message that occurs when no card was being printed, a status message, or an equipment failure message. If the problem is corrected, normal operation resumes. (Power the printer off and on if operation does not resume.)

- 5 The printer might eject any cards in the printer.

Message Tips

- If the message box disappears automatically, you might need to return to the card creation application to send the card to print again.
- If the printer beeps and the status light blinks amber but no message appears on the PC, try:
- If you printed a test card and the printer beeps but no message appears on the PC, use a card with a magnetic stripe and make sure the stripe is oriented correctly.
- Restart Windows to fix the problem.
- If a message appears repeatedly and you cannot reliably fix it, the printer might need service. Record the message and message number, the printer serial number, and the driver and firmware versions (see the Printer Toolbox). Call your service provider.

Cleaning the Printer

See “Common-sense site requirements” in [Before you install](#) for guidelines for a good printer environment, which can reduce the amount of cleaning required to produce high-quality cards.

Cleaning tips

- Run a cleaning card as the first step when cleaning the printer. The cleaning card can remove most contaminants from the printer. See [Cleaning the printer](#) for steps to follow.
- If you use Stick!Cards™, clean the card tracks after every 100 cards. Run a cleaning card to clean the card track.
- Some card features can require more frequent cleaning of the printer, especially if the cards are not high quality. Signature panels and magnetic stripes can deposit particles on rollers. You can run a cleaning card, replace the cleaning roller, or clean the printer rollers to remove particles.

Cleaning the printer rollers

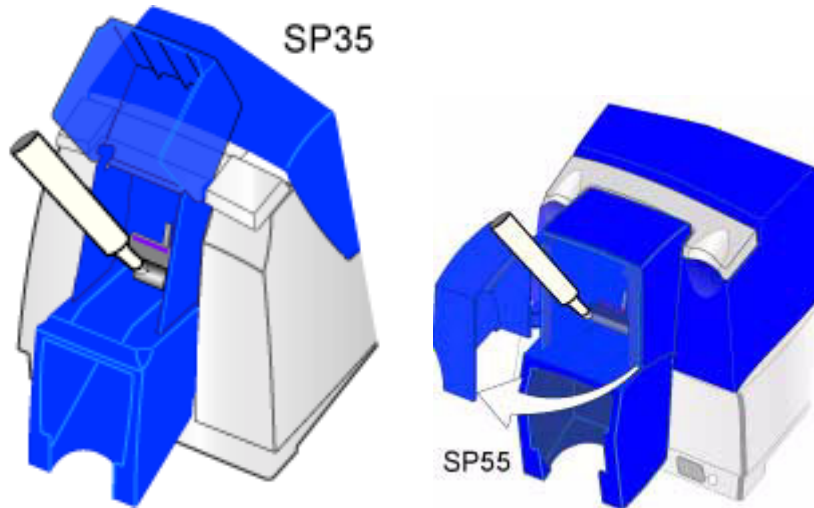
The printer rollers move the card during printing or cleaning operations. Clean the rollers when problems occur such as:

- Repeated card jams
- Cards are not being picked, repeatedly
- Colors are not aligned on the printed card

Use the cleaning pen to clean printer rollers.

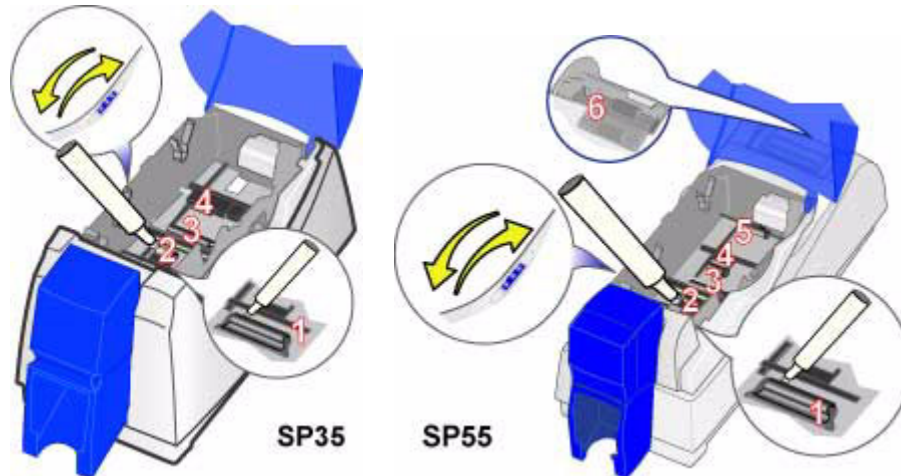
Make sure that printing of cards is complete before cleaning the rollers.

- 1 Open the Printer Toolbox if needed by double-clicking the printer icon.
- 2 Clean the pick roller:
 - a Open the input hopper.
 - b Remove all cards from the input hopper.
 - c Remove the cap from the cleaning pen. Hold the end of the cleaning pen against the pick roller.



- d Click the Clean Printer button in the Printer Toolbox. Click OK on the prompt that appears. Do not insert a cleaning card! The driver sends a command to the printer to run the printer cleaning card. The printer moves rollers when it attempts to pick the card.
 - e Slowly move the pen on the pick roller.
 - f Lightly wipe any dirt from the end of the cleaning pen onto a clean cloth or paper. Move the cleaning pen to another area of the roller. (Click Cancel on the "Card not picked" message if it appears.)
 - g Repeat steps d through f until no more dirt appears on the pen.
- 3 Clean the permanent cleaning rollers if needed:
 - a Open the printer cover and remove the print ribbon cartridge. Make sure cards are removed from the input hopper.
 - b Remove the cleaning roller.
 - c Observe the permanent cleaning rollers, especially the lower roller (location 1 in the following illustration). If you observe ribbon or other debris on the rollers, clean the rollers using the cleaning pen. (If not, continue with step 4.)
 - d Do one of the following to turn the rollers in the printer.
 - Click the Clean Printer button in the Printer Toolbox. Click OK on the prompt that appears. Do not insert a cleaning card! The driver sends a command to the printer to run the printer cleaning card. The printer moves rollers when it attempts to pick the card.
 - Turn the card advance knob to move rollers by hand.
 - e Move the pen on the roller.
 - f Lightly wipe any dirt from the end of the cleaning pen onto a clean cloth or paper. Move the cleaning pen to another area of the roller. (Click Cancel on the "Card not picked" message if it appears.)
 - g Repeat steps d through f for the rollers at location 1 until no more dirt appears on the pen or cloth.
- 4 Clean the transport area rollers:

- a Make sure the print ribbon cartridge and cleaning rollers have been removed. Make sure cards are removed from the input hopper.
- b Place the cleaning pen on top of the first transport roller (location 2 in the illustration). Do not place the pen next to the black transport base. The pen can get pinched between the roller and the transport base.



- c Do one of the following to turn the rollers in the printer.
 - Click the Clean Printer button in the Printer Toolbox. Click OK on the prompt that appears. Do not insert a cleaning card! The driver sends a command to the printer to run the printer cleaning card. The printer moves rollers when it attempts to pick the card.
 - Turn the card advance knob to move rollers by hand.
 - d Move the pen on the roller.
 - e Lightly wipe any dirt from the end of the cleaning pen onto a clean cloth or paper. Move the cleaning pen to another area of the roller. (Click Cancel on the "Card not picked" message if it appears.)
 - f Repeat steps c through e for the roller at location 1 until no more dirt appears on the pen or cloth.
 - g Move the cleaning pen to location 3. Repeat steps c through f.
 - h Move the cleaning pen to location 4. Repeat steps c through f.
 - If the printer has a magnetic stripe module, the roller is just visible below the black cover of the magnetic stripe module, on the left side of the printer.
 - If the printer does not have a magnetic stripe module, clean the upper roller and the partly hidden lower roller.
- 5 For SP55 printers, clean the additional transport rollers:
- a Make sure the print ribbon cartridge and cleaning rollers have been removed. Make sure cards are removed from the input hopper.
 - b Place the cleaning pen on top of the last transport roller (location 5 in the illustration).
 - c Do one of the following to turn the rollers in the printer.

- Click the Clean Printer button in the Printer Toolbox. Click OK on the prompt that appears. Do not insert a cleaning card! The driver sends a command to the printer to run the printer cleaning card. The printer moves rollers when it attempts to pick the card.
 - Turn the card advance knob to move rollers by hand.
- d Move the pen on the roller.
 - e Lightly wipe any dirt from the end of the cleaning pen onto a clean cloth or paper. Move the cleaning pen to another area of the roller. (Click Cancel on the "Card not picked" message if it appears.)
 - f Repeat steps c through e for the roller at location 5 until no more dirt appears on the pen or cloth.
 - g Move the cleaning pen to one of the rollers at location 6. Repeat steps c through f.
 - h Move the cleaning pen to the other roller at location 6. Repeat steps c through f.
- 6 Replace the print ribbon cartridge and cleaning roller. Close the printer cover.
 - 7 Replace cards in the input hopper.
 - 8 Print a card to verify the quality of printing. You can print a printer test card, a sample card, or a card using your card creation application.

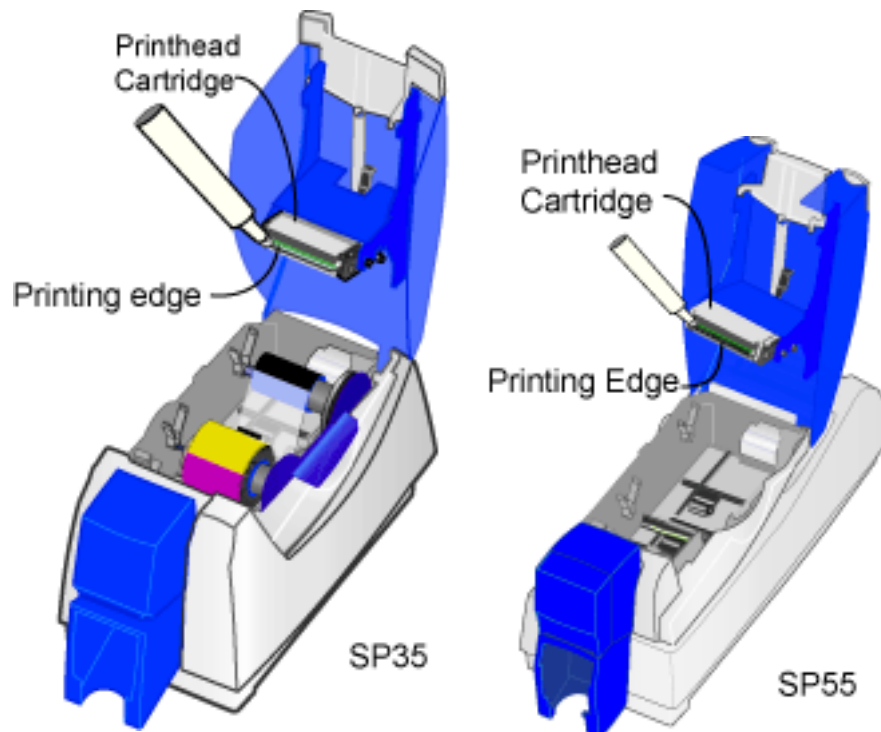
Cleaning the printhead

The printhead can have contamination stuck to it. You might notice it as unprinted lines on printed cards. Clean the printhead only when needed, such as:

- The printhead has been accidentally touched, such as when changing supplies or clearing a card jam.
- You have replaced the printhead cartridge.
- You observe problems with card appearance, as described in [Troubleshooting card appearance](#).

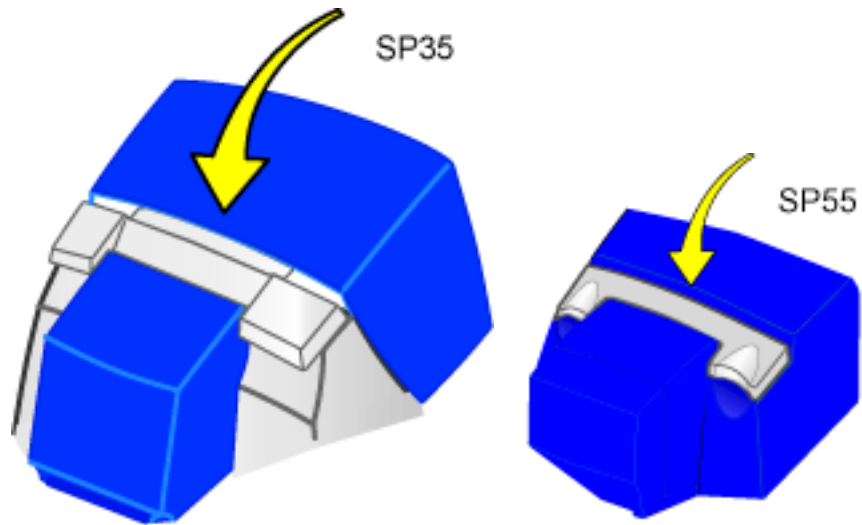
Tips for success

- Do not touch the printing edge of the printhead cartridge with your fingers. The oils on your fingers can damage the printhead.
 - Do not bump the printing edge of the printhead cartridge with any sharp objects. Sharp objects can permanently damage the printhead.
 - Use the cleaning pen to clean the printhead. Do not use a cotton swab. The fibers from the cotton can stick to the printhead.
- 1 Power off the printer by disconnecting it from the power source.
 - 2 Open the printer cover.
 - 3 Open the cleaning pen.
 - 4 Using gentle pressure, move the cleaning pen back and forth along the full length of the printhead edge (see the following illustration). Be sure to clean the rounded edge of the printhead completely.



If the cleaning pen does not remove all contamination from the printhead, contact your service provider for additional assistance.

- 5 Close the printer cover. Push firmly on the blue edge to latch the cover.



- 6 Connect the power cable to the power receptacle to power on the printer.
- 7 Print a card to verify the quality of printing. You can print a sample card or a card from your application.

Replacing the printhead cartridge

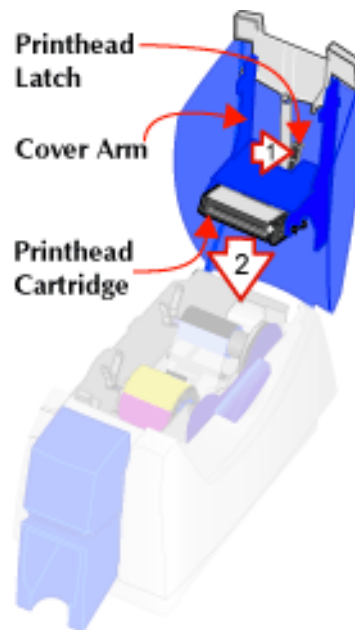
The printer uses an operator-replaceable printhead cartridge. For more information about printhead cartridges, see the [Supplies e-Guide](#).

Remove the printhead cartridge

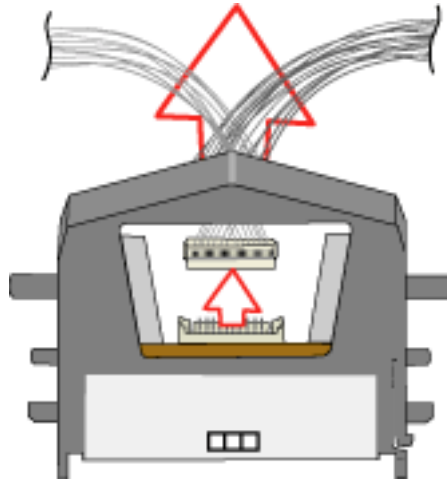
Do not touch the printing edge of the printhead cartridge. If you do, clean it using the cleaning pen, as described in [Cleaning the printhead](#).

Do not bump the printing edge of the printhead cartridge with any sharp objects. Sharp objects can permanently damage the printhead.

- 1 Power off the printer.
- 2 Open the printer cover.
- 3 Place your hand under the printhead cartridge because it will move down when released.
- 4 Press the printhead latch away from you to release the printhead cartridge.

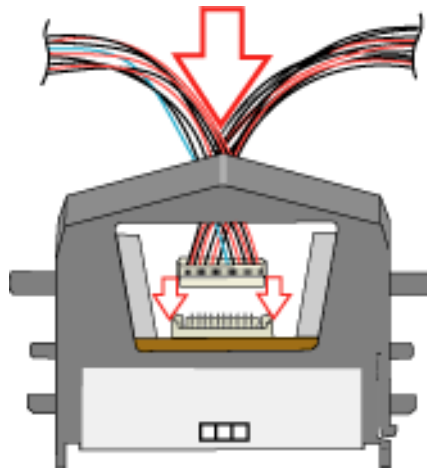


- 5 Pull on plug and cables to remove the printhead cable.

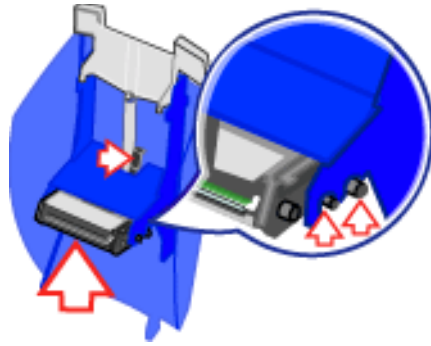


Replace the printhead cartridge

- 1 Position the printhead cartridge with the silver label toward you and on top. Place the printhead cable behind the cartridge so the plug is visible through the opening in the printhead cartridge.
- 2 Carefully align the plug with the receptacle on the printhead. Push the plug all the way onto the receptacle (see the following illustration).



- 3 Align the printhead cartridge pins with the printhead cartridge slots on the cover arm (see the following illustration).



- 4 Press in the printhead latch (step 1 in the illustration above) and push up on the printhead cartridge to seat it in the cradle. (step 2 in the illustration above). Release the printhead latch when the printhead cartridge is in place.
- 5 Clean the printhead. Move the cleaning pen back and forth along the length of the printhead edge. Be sure to completely clean the rounded edge of the printhead.
- 6 Close the printer cover, pressing down on the blue edge to latch it.
- 7 Plug in the printer to power on the printer.
- 8 Print a card to verify the quality of printing. You can print a sample card or a card using your card creation application.
- 9 If needed, fine tune edge to edge settings to center the printed image with the new printhead cartridge. See [Fine tune edge to edge printing for steps to follow](#).

Maintain the PC

Good PC operation contributes to good operation of the printer and driver. Problems on the PC can prevent efficient operation of the system that includes the PC and printer.

Perform PC hard disk maintenance on a regular basis or when the following occurs:

- The printer driver displays messages for which PC maintenance is a solution
- Applications display “Out of memory” messages
- The hard disk has less than 50 MB of space free
- Windows has shut down unexpectedly (crashed) (which can result in temp files remaining on the PC)
- The PC is used often to access the Internet

Tips for Success

- On the Windows 2000 and Windows XP operating systems, the Administrator must perform maintenance tasks.
 - Perform maintenance tasks on each PC that prints cards.
 - Follow the steps in Windows help or use the steps in this section.
 - To access Windows help, select Help from the Start menu. In the Windows Help contents, select Troubleshooting.
- 1 Save all data in your open applications.
 - 2 Close all applications, including resource monitors.
 - 3 Exit from the Printer Toolbox. (Using the Minimize button on the Printer Toolbox does **not** have the same effect.)
 - a Locate the System Tray in the right corner of the Windows taskbar.
 - b Right-click on the icon for the Printer Toolbox.
 - c From the popup menu that appears, select Exit.
 - 4 Log off any network connections.
 - 5 Run the Disk Cleanup program:
 - a From the Windows task bar, select Start, Programs, Accessories, System Tools and then Disk Cleanup.
 - b Select the drive to clean up, usually C:\.
 - c Select the types of files to delete.
 - d Select OK and then Yes on the message box. Disk Cleanup can require a minute or more to delete files.
 - 6 For Windows Me and 98, run the ScanDisk program:
 - a From the Windows task bar, select Start, Programs, Accessories, System Tools and then ScanDisk.
 - b Select the drive to scan, usually C:\.
 - c Select Standard test and Automatically fix errors.

- d Select OK. ScanDisk can require 5 minutes or more for a standard scan.
 - e When ScanDisk is complete, follow any instructions and close the program.
- 7 Free up additional disk space:
 - a From the Windows task bar, select Start, Programs and then Windows Explorer.
 - b Open the C:\Temp, C:\Windows\Temp, C:\Winnt\Temp, or C:\Win2K\Temp folder. Delete any files not being used.
 - c Open the C:\Windows\Temporary Internet Files, C:\Winnt\Temporary Internet Files folder. Delete any files not being used.
 - d Open the Recycle Bin in Explorer. Delete all files from the Recycle Bin.
 - e Click the icon for drive C:\. The status line shows the available disk space, such as:
48.2MB (Disk free space: 302MB)
 - f Make sure the Disk free space is 40MB or greater.
 - g Remove additional files if needed.
- 8 Run the Disk Defragment program if one is installed on the PC:
 - a From the Windows task bar, select Start, Programs, Accessories, System Tools and then Disk Defragmenter.
 - b Select the drive to scan, usually C:\.
 - c Select OK to run the program.
 - d When the program completes, a message appears.
 - e Select OK to close the program.
- 9 With all applications closed, from the Windows task bar, select Start and then Shutdown.
- 10 From the Shut Down Windows box, select Restart the Computer and then Yes.
- 11 If you were printing cards, restart the card creation program (such as Preface or ID Works) and send the card to print again.

Other PC problems

- On Windows 2000 and XP, the PC can appear to have maintenance problems when the user does not have the necessary permissions. See “Setting Printer Permissions” in [Installing the Driver](#) to set permissions.
- If a Datacard printer driver was installed on this PC and then removed, you can run the Cleanup Utility to remove any files that Windows does not remove. See the “Running the Cleanup Utility” in [Reinstall the Printer Driver](#).
- If the print processor is not the correct one, the PC can appear to have problems. Make sure that the “Print Processor” or the “Print using the following driver” selection in Properties is SmartDriver.

SP Series Supplies and Parts

The printer uses supplies, similar to a paper printer. The following describes how the supplies are similar and different.

- Where a paper printer uses paper that you can purchase at an office supply store, the SP Series printer uses cards that you purchase from a dealer.
- Similar to paper, there are different types of cards. For cards, you can use magnetic stripe cards, cards with a signature panel, or cards with a smart card feature. You can also use cards with more than one special feature.
- Also similar to paper, cards can be different quality. High quality cards are cleaner, smoother, more even, and more white. They result in better printer operation and the appearance of the printed cards is more pleasing.
- Paper printers can use an ink cartridge or a toner cartridge. Older dot-matrix printers use a print ribbon. The SP Series printer uses a print ribbon. The print ribbon can be a single color (monochrome) like a toner cartridge, or the print ribbon can have color panels, similar to a color ink jet cartridge. For the SP Series printer, one color ribbon has panel sets (y=yellow, m=magenta, c=cyan, k=black, and t=topcoat), which is different from many ink cartridges. For the SP55 printer, you can use a color ribbon designed for two-sided printing (y=yellow, m=magenta, c=cyan, k=black, and t=topcoat on front, k=black and t=topcoat on back). Using different supplies for printing on two sides is also different from paper printing.
- Paper printers that use ink can have pages that are damaged by water or other contaminants. The color (YMC) applied to the card from the print ribbon can be damaged by ultraviolet light, solvents, and wear. To protect the printed card, the SP Series printer applies a topcoat (T panel) after printing the color and K panels. This protection is not available for paper pages.
- Some paper printers include cleaning tools, and recommend using them when you change the toner cartridge. The SP Series printers also use cleaning supplies: a cleaning card that runs through the printer and a cleaning roller that stays in the printer. With the SP Series printers, you can also use a cleaning pen.
- Paper printers often have the ink or toner in a cartridge that also functions in applying the image to paper. The SP Series printers use a printhead cartridge, which is separate from the print ribbon. It is different from paper printers in this way. The printhead cartridge is replaceable.

This section describes the supplies you use with the SP35 or SP55 printer. It also describes replacement parts that you might want to order.

Supplies and cards

This appendix describes specifications, part numbers, and handling for supplies used with the Datacard® SP35 or SP55 printer. It includes:

- Print ribbons
- Cards to print
- Cleaning supplies, including cleaning cards, replaceable cleaning roller sleeve, and cleaning pen

Print ribbon is used to personalize cards. This section describes Datacard®-recommended personalization supplies for the Datacard® SP35 or SP55 printer and how to store them.

Print ribbons

Ribbon kits contain a roll of print ribbon, a cleaning card, and a replaceable cleaning sleeve. Datacard recommends that you run a cleaning card and replace the cleaning sleeve each time you change the print ribbon.

Color print ribbon

Datacard color print ribbon for SP series printers uses Advanced Imaging Technology™.

The following table shows the color ribbons available and the printer(s) in which each can be used:

Name	Part number	Images	Printers supported
YMCKT Color Ribbon Kit	552854-504	up to 500	SP35 and SP55
YMCKT Color Ribbon Kit	552854-204	up to 250	SP55
YMCKT-KT Color Ribbon Kit	552854-506	up to 300	SP55

The SP Series card printer features Datacard proprietary ribbons designed specifically for the SP Series card printer. When the printer recognizes that a Datacard ribbon is installed, all enhanced product features are enabled and successful card printing can begin. The printer will only print color images when Datacard proprietary color ribbons are installed. Datacard is your exclusive source for proprietary ribbons for the SP Series card printer.

Monochrome and Topcoat ribbon

Ribbon with alternating Monochrome (K) and Topcoat (T) panels is available as part of the KT Color Ribbon Kit, part number 552854-509. A roll of ribbon prints up to 1000 images.

Monochrome print ribbon

Several colors of monochrome (single-color) print ribbon are available for the SP35 or SP55 printer (or both printers). A roll of ribbon prints up to 1500 images (if ribbon-saver is not used).

Available colors include:

Color	Part number	Printers supported
Black	552954-501	SP35 and SP55
Black HQ	552954-601	SP55
Dark Blue	552954-502	SP35 and SP55
White	552954-503	SP35 and SP55
Red	552954-504	SP35 and SP55
Green	552954-506	SP55
Silver	552954-507	SP35 and SP55
Gold	552954-508	SP55
Scratch-off	552954-513	SP35 and SP55

When you use most monochrome-only print ribbons, use a printhead cartridge designed for monochrome printing for optimum results. For most card designs, you can print with a Black HQ ribbon using a color printhead. When you use a color ribbon that includes a K (monochrome or black) panel, use a color printhead cartridge. See [Printhead cartridge](#) for details.

Supply roll storage

Follow these guidelines when storing supply rolls:

- The print ribbon maintains its quality for about a year. For optimal card quality, purchase and store quantities that you can use up in less than a year.
- The print ribbon and card stock might require secure storage and tracking. Follow your policy for storing and tracking the supplies used to make cards.
- Choose a location away from direct sunlight, with a temperature between 32° F and 77° F or between 0°C and 25° C. A humidity range from 40% to 60% (non-condensing) is recommended.
- Supply rolls should be at room temperature when they are installed in the printer and used. If supplies are stored in a cooler environment than the printer, allow supplies to reach room temperature before using.
- If the printer will not be used for an extended period of time, remove supplies from the printer and store them with new supplies.

Cards

This section describes specifications and quality guidelines for card stock to use with the SP Series printer. It also describes the environmental specifications for storage of card stock.

For best results with the SP Series printer, use high-quality card stock that meets the specifications and recommendations described in this section.

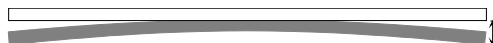
Card size

Use CR-80 size cards with the following nominal dimensions:

Length	3.37 inches	85.60 mm
Width	2.125 inches	53.98 mm
Thickness with smart card chip	0.027 to 0.040 inches	0.685 to 1.016 mm
Thickness (all other cards)	0.020 to 0.050 inches	0.508 to 1.27 mm

Actual card thickness can vary by up to ten percent from the sizes listed. Smart card chips can be raised slightly from the printing surface.

Card bow must be less than the thickness of the card.



Card material

Use cards made of the following types of material:

- Glossy PVC surface, either 100% PVC cards or composite cards with a PVC surface.
- If you use both a topcoat station and an overlay station, composite cards with a polyester core and PVC surface are recommended.
- Cards with a magnetic stripe on one side of the card.
- Cards with a smart card chip on the top of the card. Depending on the module installed in the printer, contact-type, contactless, or both types of smart card chips can be programmed.

Embossed cards cannot be processed in the SP Series printer.

StickICards

StickICards™, part number 597640-001, can be used. StickICards are used to make personalized cards that can be adhered to proximity cards when the card surface is not flat enough to print. The printing surface of the StickICard (white side) meets the material requirements for use in the printer.

When using StickICards, follow these guidelines:

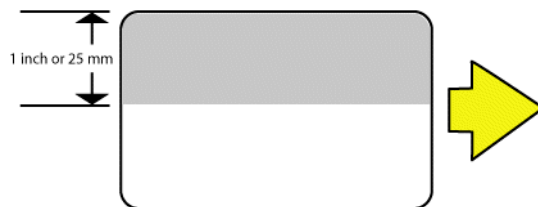
- Store cards in a cool place (such as a refrigerator) to avoid adhesive migration.
- Fan cards before loading them in the card cartridge.
- Clean the printer's card tracks to remove any adhesive residue. Use the printhead cleaning pen or isopropanol and a swab to remove the residue.
- Use a print margin of 0.1 or 0.05 inch with StickICards.

Contactless smart cards

Contactless smart cards are also called RF (radio frequency) cards and proximity cards. Contactless smart cards can have an irregular surface where the internal components of the card are located. You might modify the card design to avoid printing photos or other images over the internal components of the card.

Pre-punched cards

Datacard recommends that you punch cards after printing them. However, you can use pre-punched cards with the SP Series printer as long as the hole is free of raised areas or burrs. In the following illustration, the gray area shows where punched areas are allowed.



- The cards can only have a punched area within 1.0 in (25.4 mm) of the left-hand edge, as the cards are loaded in the card cartridge. (This dimension includes tolerance.)
- If the card has a magnetic stripe, the card cannot be punched anywhere in the stripe.

New cards preferred

The SP Series printer is designed to print on new card stock. If you print on cards twice, be careful to avoid getting dirt, fingerprints, or other contamination on cards before the second printing. Previous printing can interfere with printing and result in cards that do not have the appearance you want. Printing on cards that have been issued might introduce substances that interfere with card printing or damage the printer. See [Troubleshooting](#) to address card appearance problems with pre-printed cards.

If a previously printed card has been printed with topcoat, the card cannot be printed a second time.

Card quality guidelines

Your cards must meet the following card quality guidelines for the printer to print high quality graphics on them successfully.

Card surface

- The card must be free of irregularities such as particles embedded in the surface.
- The card surface must be smooth and even. Surface irregularities can cause loss of contact, resulting in printing voids.
- The printing surface must be glossy. It cannot have a matte finish (see [Card material](#) for more information).
- Card edges must be free of raised burrs, which can cause unprinted areas on cards (printing voids). This is especially true when printing edge-to-edge.

Card handling

These guidelines apply to unprinted cards. Any debris or particles on an unprinted card's surface can reduce print quality and damage the printhead. Grease or oils, such as oils from your fingers, also reduce print quality.

- Keep cards completely clean.
- Do not touch the print surface of a card with your fingers or hands.

- Do not use a rubber band to bind blank cards together.
- If you drop a card on the floor, do not insert it into the printer.

Card storage

These guidelines apply to both printed and unprinted cards.

- Cards must be stacked so that they will not shift and rub against each other.
- When storing cards, make sure that no two cards contain images or blocks of color that will come in contact with each other.
- Make sure that the magnetic stripe on one card does not come in contact with the magnetic stripe on another card.
- Make sure that cards with magnetic stripes are stored away from magnets and other magnetic objects.

Card storage specifications

The cards should be stored in a cool, dry, and dark place. Excessive light can cause yellowing of cards on exposed edges. Keep cards in their original packaging.

Cards should be at room temperature when they are installed in the printer and used. If cards are stored in a cooler environment than the printer, allow them to reach room temperature before using.

Cleaning supplies

The printer uses the following cleaning supplies.

- Printer cleaning cards
- Replaceable cleaning sleeves
- Printhead cleaning pen

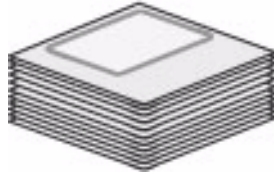
The print ribbon kit includes a cleaning card and a replaceable cleaning sleeve. Datacard recommends that you keep additional cleaning supplies on hand to address unusual situations.

You can order:

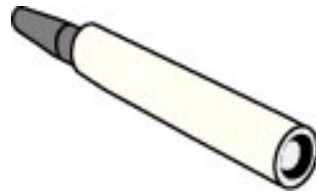
- A package of 5 replaceable cleaning sleeves, part number is 549716-001.



- A package of 10 cleaning cards, part number is 552141-002.



- A cleaning pen, part number is 557492-001, which can be used eight times, to clean the printhead or other internal parts of the printer



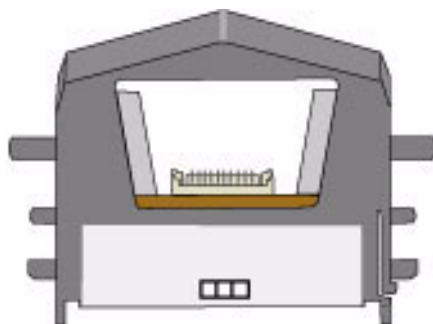
Printer components

The printer has a replaceable printhead cartridge. You can also order additional or replacement parts. This section describes the printer parts you can order.

Printhead cartridge

The printer has a replaceable printhead cartridge. The printhead is subject to wear or damage and has a direct impact on print quality. The silver label on the printhead shows the printhead type. The following printheads are available.

Printhead type	Printhead label	Part number
Full color	YMC	551439-999
Monochrome	K	551439-998



Do not touch the printing edge of the printhead in the printhead cartridge. If you do, use the cleaning pen to clean it. See [Cleaning the printhead](#) for steps to follow.

Print ribbon cartridge

You can purchase an additional print ribbon cartridge. The print ribbon cartridge is part number 551516-999.



Cleaning roller spindle

The cleaning roller spindle holds the replaceable cleaning sleeve. The part number is 551148-001.



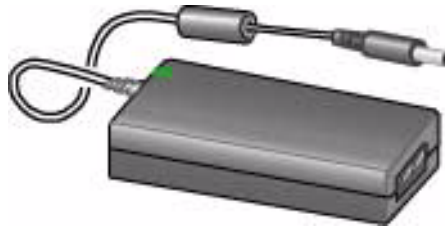
USB data cable

The SP printers use a data cable to connect the printer to the PC. The USB cable must be a Type CM 30V, up to a maximum of 2 meters long. The part number is 807614-002.



Power supply

The printer uses a power supply rated at 100-240 VAC, 50-60 Hz, 1.0 amp. The power supply is part number 808403-001.



Power cable

The printer uses one of the following power cords:

- U.S. power cable (part number 556766-010)



- European power cable (part number 806842-001)
- Australian power cable (part number 806842-002)
- United Kingdom power cable (part number 806842-003)
- Danish power cable (part number 806842-004)
- Indian power cable (part number 806842-005)
- Israeli power cable (part number 806842-006)
- Italian power cable (part number 806842-007)
- Swiss power cable (part number 806842-008)
- Japanese power cable (part number 806842-009)

Smart card cable

If the printer has one or more smart card modules, it uses a smart card cable to connect the smart card port and the PC. Use a cable that matches the port installed in the printer. The following cables are available:

USB: 807614-002

Serial: 805815-001

Serial cable

The smart card serial cable must be a shielded DB9 serial cable, up to 3 meters long maximum. The smart card serial cable is part number 805815-001.

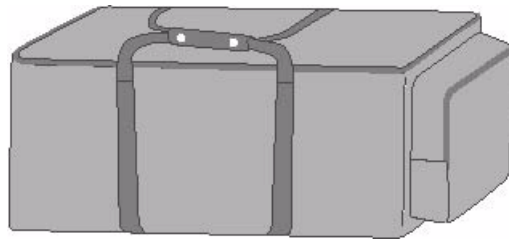


USB cable

See [USB data cable](#) for USB cable details.

Carrying case

The carrying case for an SP Series printer is part number 553950-002.



Related publications

This section describes publications for the printer.

- SP35 Printer Guide, Part Number 553772-001
 - This manual provides basic information about using the printer and driver, and how to care for the printer. It also includes the warranty statement and the installation report.
- SP35 Installation Map, Part Number 539252-001
 - This sheet provides a streamlined installation process for typical one-printer-to-a-PC installation. It also shows supplies and equipment shipped with the printer.
- SP55 Printer Guide, Part Number 554733-001
 - This manual provides basic information about using the printer and driver, and how to care for the printer. It also includes the warranty statement and the installation report.
- SP55 Installation Map, Part Number 539336-001

- This sheet provides a streamlined installation process for typical one-printer-to-a-PC installation. It also shows supplies and equipment shipped with the printer.
- SP Series Info Central, Part Number 539289-001
 - The online e-Guide provides advanced information, such as how to connect two printers to one PC. Info Central collects all the online information under one desktop icon. It can be download from www.datacard.com or installed from the User Information area of the driver CD-ROM.
- SmartDriver API Software Developer's Manual, Part Number 526720-001
 - This manual is part of the SmartDriver Software Developer's Kit (557214-001) and provides information to programmers who are developing applications to print to Datacard printers, including SP Series printer. This manual is available only as part of the kit.
- SP Series Printer Service Information CD, Part Number 539291-001
 - This CD provides information to service providers who maintain or repair the SP35 and SP55 printer.

Troubleshooting

This e-Guide helps you to understand problems you might have when using an SP Series printer and how to address those problems.

Is it really trouble?

The following table provides a quick guide to help you get started troubleshooting. Pick the problem that is most like yours (or use the Contents to locate the section you are interested in).

Problem	Is it trouble?	Why? What do I do?
A message appears.	No.	Messages don't mean trouble--messages are expected during normal operation. See help for the message to address the problem.
The printer beeps and the status light flashes, but no message appears.	Probably not.	This is problem can be the result of: - Changing the printer name or the printer port (restart Windows to fix the problem). - Pausing the printer when making a printer test card (power-on test card). Press the Ready button to resume printing. - Communication problems. See Locating the problem for steps to follow.
The same message (or series of messages) appears repeatedly, and the solutions listed in help do not fix it.	Yes, part of the printer might be broken.	You should call your service provider after you have tried all the solutions listed in help.
I send a card to print from the PC, but it does not print.	Maybe.	Communication problems can usually be fixed. Rarely, they are the result of a printer problem. See Locating the problem for steps to follow.
I installed the driver, but the printer does not print cards.	Probably not.	This is usually a result of communication problems and can often be fixed. See Locating the problem for steps to follow.
Cards have scratches.	Probably not.	You can fix this problem, because it is probably due to the card stock, the environment in which you print, or how you handle cards and supplies. See Card appearance problems for guidance.
The color on the cards is not right.	Probably not.	This is usually a setup problem. See Card appearance problems for guidance.
When I power on the printer, nothing happens, not even after 5 minutes!	Maybe.	See Locating the problem , which gives you steps to follow to locate the problem.

How do I troubleshoot a problem?

When you experience problems using the printer, follow these guidelines:

- Keep notes on the problem, including the message text or message number and the solutions you attempt.
- Communication method used to connect the printer and PC
- Obtain information about the supplies used, including:
 - Card stock and type (such as composite or PVC, three-track magnetic stripe, manufacturer, and so on). This information is located on the packaging for cards.
 - Type of ribbon (such as YMCKT) and the lot number used for personalizing cards. This information is located on the package of the ribbon.

If you need to call for service, this information will help your service provider address your concerns.

Locating the problem

When you think the printer is not working correctly, use the following procedure to locate the source of the problem.

The printer, printer driver, and card creation application work together to produce cards. If the system is not working as you expect and does not display messages, follow these steps to isolate the source of the problem before contacting your service provider.

- 1 Make a printer test card, following the steps in [Making Test Cards](#).
 - If the printer does not make a test card, make sure the printer is connected to a functioning power source. (Remove the printer power cord from the output and connect another device such as a light to the same outlet, to verify that the power source functions correctly.)
 - If the power source works but you cannot create a printer test card, the printer is likely not working properly.
- 2 Print a sample card from the Printer Toolbox. As an alternative, you can print a Windows test page, following the steps in [Windows test page](#).
 - If the sample card or Windows test page does not print, but the printer test card prints, the printer driver or the PC are not set or operating properly, or there is a communication problem. See [Communication problems](#).
- 3 Make sure the printer is the selected printer in the card creation application.
- 4 Use the card creation application to print a card.
 - If the card creation application does not print the card as expected, but the test card and sample card print, the card creation application is likely not set or operating properly.

Making Test Cards

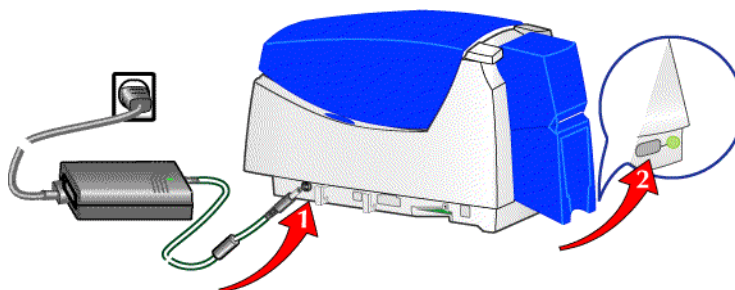
You can make the following types of test cards.

- Printer test cards verify the function of the printer. You print them using controls on the printer. The personalization of the card is determined by the printer, the print ribbon, and modules (such as magnetic stripe) installed in the printer.
- The Windows test page, which you can print on a card, verifies that the PC and printer work together. You print them using the printer Properties dialog box on the PC. The appearance of the card is determined by Windows.
- Printer magnetic stripe test cards, which verify that the driver sends magnetic stripe information to the printer and verifies that it is encoded. Use controls in the Printer Toolbox to print magnetic stripe test cards. See [Magnetic stripe test card](#) for steps to follow.
- Sample cards, which are made using files provided with the driver. Sample cards are made at installation to verify that the printer produces the same result at the factory and at your site. See “Print a sample card” in [Install the Driver](#) for steps to follow.
- You can also make sample cards using the card creation application to test print quality and card design. Do not make sample cards until you are sure the printer and driver work properly (by printing a printer test card and Windows test page).

Making a printer test card

The SP Series printer does not need to be connected to a PC to print this card.

- 1 Power off the printer.
- 2 Confirm that cards and print ribbon are loaded in the printer. See the SP35 [Printer Guide](#) or SP55 [Printer Guide](#) if needed.
 - If the printer has a magnetic stripe module, the cards for a printer test card must have a magnetic stripe.
 - If it is a three-track module, be sure to use high coercivity blank cards (which are shipped in the Starter Kit).
- 3 Power on the printer (1). Within 5 seconds, press and hold the Ready button (2), as shown in the following illustration. Hold the Ready button until the printer sounds three tones, usually about 15 seconds.



- 4 Release the Ready button and observe the printer. You hear the internal components initialize and the printer starts processing the card.

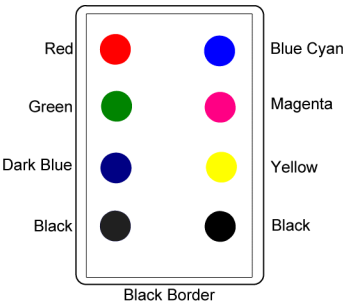
- 5 After it is printed, remove the card from the output hopper. A printer test card is shown in [Printer test card](#).

Tips for success

- The Ready button must be pressed firmly. You might need to hold the printer in place as you keep the Ready button pressed.
- Allow 30 to 60 seconds for the printer to begin printing the test card.
- If the status light flashes amber and the printer beeps, the printer is paused. Press the Ready button once to unpause the printer.
- The status light will flash green while the printer is processing the data.
- If the printer test card did not print successfully, try the procedure again making sure you follow the instructions. If the test card does not print, or if the printer does not initialize, it contact your service provider for assistance.

Printer test card

The printer test card is designed to perform most functions available in the printer.



Check the following:

- The test card has the pattern shown on the front of the card. (The pattern will be black dots, not colored dots, if the printer is using a monochrome ribbon.)
- If a magnetic stripe module is installed in the printer, the following data is encoded on the card:

Track	Format	Data
Track 1	(IATA)	TEST PATTERN IATA CHARACTER SUBSET 0123456789
Track 2	(ABA)	012345678012345678990123456789
Track 3	(TTS)	0123456789=9876543210
Track 3	(NTT)	0123456789=9876543210

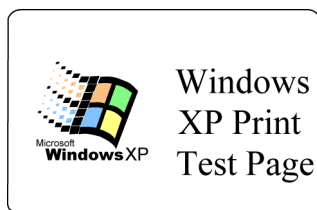
- The tracks available depend on the type of module installed.
- The magnetic stripe data on the printer test card is generated by the printer and does not test driver-to-printer communication.

Windows test page

Follow these steps to print a Windows test page on all supported operating systems. This card will print across a network and can confirm that the driver and printer are communicating correctly.

The printer must be connected to the PC with the driver installed, and both printer and PC must be running.

- 1 Select Start from the Windows taskbar.
- 2 Select Settings and then Printers (Printers and Faxes on Windows XP) from the Windows Start menu. The Printers (and Faxes) window appears.
- 3 Click once on the printer icon.
- 4 Select File from the Printers menu bar, and then select Properties. The Properties dialog box appears.
- 5 Select the Print Test Page button on the General tab. Wait while Windows creates a test page image. The card will print when the PC and printer are connected, and the printer and driver are working together.
 - After you select the Print Test Page button, Windows displays a wizard asking if the page printed correctly. Click “Yes” on this dialog box to end the Wizard. This guide provides the information you need to address problems with PC to printer communication.
- 6 Remove the card from the printer. The card should look similar to the cards shown below.



Tips for Success

- The exact appearance depends on the operating system and selections made on the PC (some cards have more characters printed while others have fewer characters). Any printing on the card is considered successful printing, regardless of the appearance of the card.
- If the card does not print, troubleshoot a communication problem. See [Communication problems](#) for steps to follow.
- The Windows test page can have a very different appearance, depending on the operating system and how the printer is connected to the PC.

- The Windows test page is generated by Microsoft Windows. The small size of the card, compared to printer paper, means that some of the text is not printed on the card.

Card appearance problems

Problems with card appearance can be the result of the following:

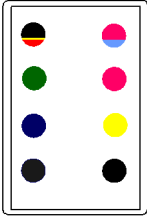
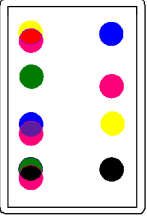
- Image capture tools, such as the camera
- The card creation application, which displays the image
- Limitations in technology, such as differences between how an image looks on the PC monitor and how it looks after it is printed
- Printer maintenance or settings

This section describes possible problems you might observe with the quality of cards you produce with the SP Series printer. To diagnose and fix card quality problems, find the symptom in the tables that follow. For each possible cause, attempt the solutions in the order listed.

To find the topic that describes how to perform the procedure, do one of the following:

- Type an important word (such as clean or ribbon) in the Index or Search tabs
- Find the procedure in the Contents list for SP Series Info Central.

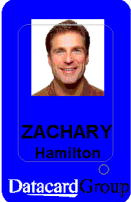
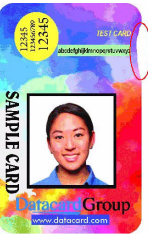
What you see	Possible causes	Solutions
One or more unprinted lines run the entire length of each card. 	The printhead might be dirty or damaged. The card was scratched after it was printed. The printer is positioned next to a device that emits radio waves in excess of regulations.	Clean the printhead. Print a sample card to confirm that the problem is fixed. Run a cleaning card and then change the cleaning roller. Move the printer away from the source of radio waves. If cleaning the printhead or moving the printer does not solve the problem, contact your service provider.

What you see	Possible causes	Solutions
No image is printed on the card or the printing is very light. 	The ribbon is loaded incorrectly. The printhead cable might be loose. Two cards were picked. The printhead cable or printhead cartridge might be damaged. The driver or printer settings might not be correct.	Remove and replace the ribbon. Power off the printer. Make sure the printhead cable is securely connected. Fan cards before loading them. Replace the printhead. Change values on the Color Settings tab of the Printer Toolbox. If needed, change printhead intensity. If the problem persists, contact your service provider.
Part of the printed card is not the expected color. 	The ribbon might have been moved while the printer power was off. The transparent wheel on the print ribbon cartridge might be dirty. The transparent wheel on the print ribbon cartridge might be damaged or out of position.	The next card will print correctly. If this happens frequently, change the Ribbon Initialization setting. See "Card Design Checklist" for more information. Clean the wheel using the cleaning pen. If another print ribbon cartridge is available, see if it fixes the problem. Obtain a new cartridge. If the problem persists, contact your service provider.
One color panel is not aligned correctly with other panels. 	Cards might be slipping in the card track. Two cards might have been picked. The Leading Edge setting might be too close to the edge (a value close to 0). The card might be shorter or longer than specifications, or the card registration might be incorrect.	Run a cleaning card and then change the cleaning roller. Clean the printer rollers. Fan cards before loading them. Change the Leading Edge setting. Change card settings with the guidance of your service provider. If the problem persists, contact your service provider.

What you see	Possible causes	Solutions
Printed images (photos) look faded. 	The image capture system needs adjustment. Color settings might not be optimal for the card design.	See the information for the image capture system. Change color settings.
Printed cards, including text, look faded. 	Print ribbon may have been stored improperly or damaged. Color settings might not be optimal for the card design. The cards may not meet specifications. The printhead may be dirty. The card thickness or type of cards have changed. The power supply is not the one supplied with the printer from the factory. The printhead had been changed.	Change the print ribbon and then print a sample card. Change color settings. Obtain and use a different supply of cards. Clean the printhead. Change the brightness setting. Change the intensity setting for monochrome (K) or topcoat. Use the factory-supplied power supply or change the intensity settings. Change the intensity settings. If the problem persists, contact your service provider.
Text is missing from the printed card. 	Text to print on the card was formatted using a non-TrueType font.	Format text to print using only TrueType fonts (does not apply to magnetic stripe text).

What you see	Possible causes	Solutions
The bottom of the card is partly printed. 	The Trailing Edge setting is too far from the edge of the card.	Change the Trailing Edge setting. If the problem persists, contact your service provider.
The top of the card is partly printed. 	The Leading Edge setting is too far from the edge of the card.	Change the Leading Edge setting. If the problem persists, contact your service provider.
Printed images (photos) are blurry. 	The image capture system needs adjustment. The cards have a matte, not glossy, surface. The image needs sharpening.	See the information for the image capture system. Use cards with a glossy surface to print sharp images. Change the Sharpness setting on the Color Settings tab of the Printer Toolbox.
Printed cards, including text, are blurry. 	The rollers may be dirty. The cards may have a very slippery surface or they might not meet specifications. The printhead might be dirty.	Run a cleaning card and then change the cleaning roller. Clean the printer rollers. Obtain and use a different supply of cards. Clean the printhead. If the problem persists, contact your service provider.

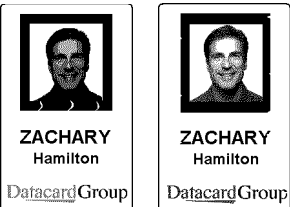
What you see	Possible causes	Solutions
Part of the printed image is discolored. 	Cards might have fingerprints or other dirt on them. The cards might be contaminated or otherwise not meet specifications. The rollers might be dirty. A signature panel is located on the other side of the card.	Handle cards without touching the surface to be printed. Wear gloves when handling unprinted cards. Obtain and use a different supply of cards. Run a cleaning card and then change the cleaning roller. Clean the printer rollers. Redesign the card to avoid printing photos over signature panel residue.
The card shows wrinkles in darkly colored areas of printing. 	The printhead intensity is too high. Card stock is thin. The card includes very dark areas. The printhead is not aligned correctly.	Decrease the printhead intensity setting. Change the brightness setting. Change the image to use lighter colors or smaller areas of dark colors. Contact your service provider.
A line appears from one long edge to the other. (A dot column is missing in one color panel.) 	The rollers are dirty. The cards may have a very slippery surface or they might not meet specifications.	Run a cleaning card and then change the cleaning roller. Clean the printer rollers. Obtain and use a different supply of cards. If the problem persists, contact your service provider.

What you see	Possible causes	Solutions
A pattern is visible on the printed card when printing a smart card. 	You are printing on an RF (contactless) card and the card surface is uneven where the antenna and chip are located. (This problem can also occur on the back side of a contacted smart card chip.)	Change the card design to avoid placing a photo or other important feature over smart card components. See the card manufacturer's web site for details. Avoid solid-color and half-tone backgrounds, which can highlight the location of components. If most cards are defective, exchange this card stock for new card stock.
The printed card shows small unprinted spots. 	Unprinted cards include scratches or embedded particles, the card surface is uneven, or the card edge has burrs. The rollers might be dirty. Cards might have dirt or debris on them.	If the problem occurs frequently, obtain and use a different supply of cards. Run a cleaning card and then change the cleaning roller. Clean the printer rollers. Run a cleaning card and then change the cleaning roller frequently.
The printed card shows wavy lines along the length of the card (woodgrain texture or rainbows). 	The print ribbon is not loaded correctly. Cards might not meet specifications. The printhead might not be aligned correctly.	Load the print ribbon again. Make sure the cartridge is firmly seated. Obtain and use a different supply of cards. Contact your service provider.
Part of the printed card is blank. 	Cards might not meet specifications. Cards might be dirty. The printhead cartridge might not be installed properly.	Obtain and use a different supply of cards. Clean the printer more often. Remove and reinstall the printhead cartridge.

What you see	Possible causes	Solutions
All card data is positioned unevenly on the card. 	The Long Edges setting might be incorrect.	Change the Long Edges setting on the Edge to Edge tab of the Printer Toolbox. If the problem persists, contact your service provider.
One front-side margin (on a long edge) is larger than the other. This might appear as one edge of the card being unprinted. 	The print ribbon spools are not pushed completely onto the cartridge spindles.	Push each print ribbon spool onto its spindle until it clicks into place. If the problem persists, contact your service provider.
Printed cards are too dark. 	The power supply is not the one supplied with the printer from the factory. The printhead has been changed. The card thickness or type cards have changed.	Use the factory-supplied power supply or change the intensity settings. Change the brightness setting. Change the brightness setting. Change the intensity for monochrome (K) or topcoat.
The card is printed upside down (the image is rotated 180 degrees). 	The card creation application has rotated the card. The SmartDriver card rotation setting might be incorrect.	See the information for the card creation application. Set the card rotation using the Properties (98 and Me) or Printing Preferences (2000 or XP) dialog box.

What you see	Possible causes	Solutions
The printed image on one or a few cards has high contrast. 	The card had topcoat printed on it and then an image was printed. The cards do not meet specifications.	Do not re-use cards ejected from the printer. Obtain and use a different supply of cards.
The card shows irregular lighter or darker spots. 	The topcoat panel of print ribbon is wrinkling because the intensity setting is too high. The printhead might not be aligned correctly.	Lower the printhead intensity setting for topcoat. Contact your service provider.
A short edge of the topcoat does not stick to the card. 	The printhead intensity is too low. The card thickness or type of cards have changed. The printhead is not aligned correctly.	Increase the printhead intensity setting for topcoat. Change the brightness setting. Change the intensity for monochrome (K) or topcoat. Contact your service provider.
Random scratches appear in the topcoat of the printed card. 	The inside of the printer might be dirty. Supplies were mishandled.	<i>Run a cleaning card and then change the cleaning roller.</i> Store supplies in a clean environment. Keep supplies in their packaging until loaded in the cartridge. If the problem persists, contact your service provider.

What you see	Possible causes	Solutions
A color panel is missing from the printed card. 	You have printed a card when the ribbon was moved after powering off the printer. You are using a YMCKT-KT ribbon and did not apply topcoat on the back of the card.	The next card will print correctly. If you move the ribbon often with the power off, change the Ribbon Initialization setting to on. The next card will print correctly. If you print without using topcoat on the back of the card, change the Ribbon Initialization setting to on.
Fine lines appear in the topcoat, usually on one long edge of the card. 	The printhead intensity for topcoat is too high. The card thickness or type of cards have changed. The printhead is not aligned correctly.	Lower the printhead intensity setting for topcoat. Change the brightness setting. Change the intensity for monochrome (K) or topcoat. Contact your service provider.
The topcoat appears dull when the card is held to the light and turned. 	The printhead intensity for topcoat is too high. The card thickness or type of cards have changed.	Lower the printhead intensity setting for topcoat. Change the brightness setting. Change the intensity for monochrome (K) or topcoat.
Black-and-white images are poorly dithered. 	The image capture system needs adjustment. Brightness, contrast, or sharpness might not be set for the card design. The card stock might not meet specifications.	See the information for the image capture system. Change settings on the Color Settings tab in the Printer Toolbox. If this does not fix the problem, change the intensity setting. Obtain and use a different supply of cards.

What you see	Possible causes	Solutions
Text printed on the card has broken (partly printed) characters. 	The intensity setting is balanced to print both bar codes and fine text. The text is formatted to print in color and the card is being printed with monochrome ribbon.	If the card does not include a bar code, increase the intensity for K printing. If the card includes a bar code, do one or more of the following to change the text: -Increase the font size -Make the text bold -Remove italic formatting -Change the font (Arial usually prints well) Format the text to print black so the text is not dithered.
Printing with monochrome ribbon has voids. 	You are using an HQ black ribbon (PN552954-601) on a monochrome printer, which can result in ribbon wrinkling.	HQ ribbon is intended for use with a color printer. Switch to regular black ribbon (PN552954-501) if you use a monochrome printer. To use the ribbon you have purchased, reduce the intensity setting.
Printing with a monochrome color ribbon (such as green or red) is uneven, is spotty, or does not cover the card completely. 	The intensity setting is too low. The card stock requires different settings. You are printing dithered images with a monochrome ribbon.	Increase the printing intensity. Be careful to find a balance between printing all card data and causing wrinkles. Change the intensity setting and card design to obtain the best result possible with the ribbon and card stock. Printing with light-colored ribbon on dark card stock will not cover the card completely. Print only text and line art with a colored monochrome ribbon.

Communication problems

Communication between the printer and PC can be disrupted for many reasons. This section describes causes and possible solutions.

For locally attached printers:

Problem	Solution
The data cable is loose.	Reconnect the data cable to the ports on the PC and the printer. Restart the printer. If the PC and printer still do not communicate, restart Windows.
The data cable is damaged or frayed.	Power off the printer. Replace the cable if you have a spare. Contact your service provider to order a new data cable.
Another electrical device is causing radio interference.	Move the printer away from the source of interference, such as a TV or PC monitor. Use the printer in an environment free of electromagnetic interference.
Another USB device is attached to the PC and the printer and other device do not work together.	Remove the other device and restart the printer and PC. If PC to printer communication resumes, use separate PCs for the printer and the other device. You will need to install the device that gets moved to another PC.
The data cable is too long, or unpowered USB hubs are used between the printer and PC.	See Troubleshooting installation problems for specific troubleshooting steps.
The printer was not installed as recommended and now is not connected to the original port.	If you do not allow the Windows Add/Detect New Hardware Wizard to install the printer, the PC can lose track of the printer if it is moved to a different USB connection. Connect the PC end of the USB cable to the same USB port it was originally attached OR remove the driver and install the printer again.
The system has a temporary communication problem.	Click Retry to attempt to print the card data again.
Windows USB components on the PC are not functioning properly.	On Windows 2000 and XP, begin with the printer connected to the PC and powered on. Open the Printers window and observe the printer icon; it should be dark blue when selected. Now, unplug the printer; the icon should change to light gray. If this occurs, the printer USB components and Windows components are operating correctly. On Windows 98 or ME, this test is not as reliable. Also, operating system USB components are not as robust. Suggestions: Service packs and Windows Update, available from Microsoft, often include fixes for USB communication problems. Make sure the PC has the latest service pack installed and that Windows Update is current. If these changes do not fix the problem, consider upgrading the operating system to Windows 2000 or XP.
The PC port does not communicate reliably with the printer port.	Replace the PC port or the PC. Contact your PC or port vendor if you need assistance.

For local or network-connected printers:

Problem	Solution
Other applications on the PC might interfere with data communications.	Many applications that might run on a PC can interfere with communications, often by using all (or most) PC resources. For example, network-connected mail applications can poll a server to send or retrieve items. Depending on the application, network setup, and PC resources, polling can use all PC resources and prevent data transmission either locally or over the network. Suggestions: Close other applications that are not needed. Consider opening network-connected applications several times daily rather than keeping applications open at all times. Consider increasing PC resources or using a separate PC for purposes other than printing cards.
Other hardware connected to the PC can interfere with communication.	An application on the PC, such as a card creation application, might use other equipment, such as a camera or a security key. The application must communicate with the device, such as when capturing a photo to be printed on the card. Depending on the application, equipment setup, and PC resources, communication with the device can use all PC resources and prevent data transmission either locally or over the network. Suggestions: Adjust the timing for sending the card to print. Often, a second or two of waiting can correct the problem. Consider increasing PC resources.
You have selected another printer in the application.	Many PCs have more than one printer installed. In the application you use, make sure that SmartDriver is the selected printer.

For network-connected printers:

Problem	Solution
The network is not working properly	Follow your network troubleshooting procedures to isolate and test each component of the PC-to-printer communication link. Suggestions: The PC-to-network connection can be checked by accessing a network resource, such as a network drive. The network administrator can check communication between a server and the printer. Make sure the user is logged in to the network, even for an ad-hoc wireless connection.
The printer is not configured with the correct network address.	Make sure that you have entered the server name or IP address in the Port Settings or Configure Port dialog box on the PC. (If your network uses DHCP, the IP address changes and cannot be used when configuring the port.) See "Direct Network Printing" in the Installation e-Guide for details.

Cards sent from a client PC are not printing.	The host PC used for shared printing can be disconnected or powered off. An authorized user must be logged on to the host PC for cards to print. Messages might be displayed on the host PC and need to be cleared before printing can resume. Suggestions: Implement procedures to permit all users who need to print to do so. Consider attaching the printer to the network using a print server to enable direct network printing.
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Also consider the following problems, which can seem similar to communication problems:

Problem	Solution
The printer is shared with another PC, and an interactive mode (smart card or read magnetic stripe) job was sent from the host PC.	Interactive mode jobs, including smart card jobs and read magnetic stripe jobs, are not supported for shared printers. Do not send interactive mode jobs to a shared printer.
The printer driver was upgraded, but you did not restart Windows before trying to print a card.	Restart Windows after upgrading the driver to enable printing cards.
On Windows XP and Windows 2000, the user does not have permission to the folder used to temporarily store the card data.	Show this topic to the Windows administrator and ask for assistance.
The Windows Print Manager is not operating correctly.	Close all applications and restart the PC. On Windows 2000 or XP, restart the Print spooler. See Windows 2000 or XP help for more information.

Magnetic stripe problems

This section helps you to troubleshoot magnetic stripe problems.

Magnetic stripe test card

If the printer includes a magnetic stripe module, you can print a magnetic stripe test card. The card uses the magnetic stripe settings in the Properties or Printing Preferences dialog box.

Use this card to verify that the printer encodes a card correctly.

Tips for success

- If the printer is set to print a custom magnetic stripe format, it will not print this test card successfully. The driver will display a message indicating that the data does not meet the requirements for the magnetic stripe track or that it cannot read the data.
 - The printer must be connected to the PC with the driver installed, and both printer and PC must be running.
- 1 Make sure that the Printer Toolbox is open. If needed, double-click the printer icon in the system tray to open the Printer Toolbox.
 - 2 Make sure that magnetic stripe cards are loaded in the card cartridge. The magnetic stripe must be oriented with the stripe down and toward the right side of the printer (toward the name label).
 - 3 Click once on the Print Mag Stripe Card button in the Printer Toolbox. The printer driver formats card data for the type of module installed, as follows:
 - Three-track: IAT formatted data (IATA data on track 1, ABA data on track 2, and TTS data on track 3).
 - NTT track: NTT formatted data on the track.
 - See Magnetic Stripe Setup in the [Setup e-Guide](#) for more magnetic stripe information.
 - 4 Remove the card from the card output tray.
 - 5 Test the card by passing it through a card reader that will display the data encoded on the card. The encoded data should match the data printed on the test card.

Common magnetic stripe problems

This section lists some common problems that can occur when encoding magnetic stripe data and provides solutions.

Problem	Solution
Cards are not oriented correctly in the card tray.	Load cards correctly in the card tray.
Cards do not have a magnetic stripe.	Load magnetic stripe cards in the card cartridge. If the cards have a magnetic stripe, check the quality of the cards. Change card stock if needed.
The card has dirt or damage on the magnetic stripe.	Encode and print the card again. If the message appears again, run a cleaning card to clean the magnetic stripe head.

Problem	Solution
The magnetic stripe on the card is low coercivity material and the High Coercivity setting is selected.	To use the cards you have, select low coercivity encoding. To encode with high coercivity, obtain cards manufactured for high coercivity encoding.
The magnetic stripe on the card is high coercivity material and the Low Coercivity setting is selected.	To use the cards you have, select high coercivity encoding. To encode with low coercivity, obtain cards manufactured for low coercivity encoding.
The magnetic stripe module did not read the data encoded on the card successfully.	Run a cleaning card to clean the magnetic stripe head. If the message appears often, contact your service provider and inform them of the problem.
The data for this job has more characters than allowed by the magnetic stripe format selected for the track.	Cancel the current print job. Make sure you know what data is allowed on the track. (See the Administrator for your system to obtain information about the data allowed for each track.) Change the data to be encoded, and resend the print job.
The data for this job includes characters not allowed by the magnetic stripe format selected for the track.	Cancel the current print job. Make sure you know what data is allowed on the track. Change the data to be encoded, and resend the print job.
The magnetic stripe data was sent in an encoding format not supported by the track.	This problem most often occurs when the driver is set to "Use Printer Setting" for the Encoding Format. Check the encoding format setting for the tracks by using SmartDriver Diagnostics. Make sure the application is using the selected encoding format for the track. If the application and track are set to the same format, and the message appears repeatedly, contact the application provider for assistance.
The card creation application sent track data for a track not supported by the magnetic stripe module.	Check the type of magnetic stripe module in the printer. If the printer label indicates an IAT module, you can send data for tracks 1, 2, and 3. If the printer label indicates an NTT module, you can send data for track 3. The magnetic stripe module and cards must be capable of accepting and encoding each track of data the card creation program sends.

How to identify the track format

An authorized user can use SmartDriver Diagnostics to identify the track format. On the Mag Stripe Configuration page, the track format is displayed for each track. If the format is Custom, your service provider should tell you what the track length and allowed characters are. If the format is Binary, your application controls the data. See information for the application for allowed characters and track length.

Obtaining service

For repair assistance, contact your service provider. Place the service call from a telephone close to the printer so that you can access the printer and the PC running the driver while talking to the customer support representative.

Your service provider should record information about how to contact them on the back cover of the Printer Guide shipped with the printer. If you do not know how to contact your service provider, contact Datacard, who can direct you to your service provider. See the inside of the front cover of the Printer Guide.

Before you call for service, make sure you have the information recorded during troubleshooting, as described in this e-Guide. Also, make sure you have the serial number of the printer. It is located on a label that is visible when you open the top cover of the printer.

When to obtain service

Perform the steps at the beginning of this chapter before obtaining service. Call for service if:

- A troubleshooting process instructs you to call service
- A troubleshooting process does not produce the expected result
- You experience a problem repeatedly

Packing the printer for shipping

When service asks you return the printer to a service center for repair, pack the printer for shipping. You might also need to pack the printer to send it to another location.

- 1 Turn off power to the printer.
- 2 Remove the power cord from the printer and power receptacle. Remove the data cable and any other cables attached to the printer.
 - If you are shipping the printer to use at another location, pack the power supply, power cord, data cable, and any other cables in the accessories tray.
 - If you are shipping the printer for service, do not ship cables with the printer unless asked to do so.
 - Service might ask you to ship cards or additional samples of your current supplies. If service requests cards or supply samples, place them in the accessory tray to prevent damage to the printer.
- 3 Remove all cards from the card tray, card output tray, and printer. Do not ship cards unless asked to do so.
- 4 Remove the continuous cleaning roller from the printer unless asked to return it. Put the spindle with other accessories, such as the Printer Guide.
- 5 Make sure the card tray door is firmly closed.
- 6 Close the cover.
- 7 Use the original shipping carton, plastic bag, and foam shipping supports.
- 8 Place the plastic bag around the printer.
- 9 Make sure the bottom shipping support is in place.
- 10 Place the printer in the shipping carton, resting in the shipping supports.
- 11 Place the top shipping support in place.

- 12 Place the accessories tray in the shipping carton, on the top.
- 13 Close the shipping carton.
- 14 Secure the carton with shipping tape. Be sure to wrap around the shipping carton several times to secure it.
- 15 Put a shipping label on the carton. If you are returning the printer for service, use the address provided by service.