Datacard®

User's Guide for the ImageCard® IV Printer

ImageCard® Series

May 2003

Part No. 539042-001

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.

Liability statement

This Datacard® product has been built to the high standards of DataCard Corporation. See “Safety and compliance” on page A-1 for the statement of liability.

Regulatory compliance

This Datacard® product conforms to regulatory requirements as specified in North America and Europe. See “Safety and compliance” on page A-1 for detailed regulatory compliance information.

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Trademark, service mark, and copyright acknowledgments are listed in “Safety and compliance” on page A-1.

Proprietary Notice

Revision Log: User’s Guide for the ImageCard IV Printer

Revision	Date	Affected Pages	Description of Changes
A	June 99	All	Previously published as ImageCard IV Administrator's Guide
B	Mar 2000	All	Particle detect option, change to overlay and topcoat, driver installation changes
C	May 2003	Ch 1, 3, 4, 6, 7, 8. App. A, B, C, D, F.	Update driver information, update terms, and include hardware changes

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Contents

Overview

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This chapter presents the following:

- The purpose of this manual
- Who should use this manual
- The Datacard® ImageCard® IV photo ID printer, including a description of the printer, its components, and the driver
- Optional features of the ImageCard IV printer that may or may not be part of your printer
- How information about optional features is identified in this manual
- How the ImageCard IV printer and the driver work

About this manual

This manual provides detailed information about the Datacard® ImageCard® IV photo ID printer.

This User Guide works with the online *e*-Guide, which you can see using the desktop icon installed with the printer driver. Figure 1-1 shows the *e*-Guide icon.

Figure 1-1: Desktop icon for the *e*-Guide

Audience

This manual is intended for persons using an ImageCard IV printer, including:

- **Installer:** This manual provides detailed information about installing and setting up the ImageCard IV printer.
- **Administrator:** This manual provides detailed printer information for the person who has responsibility within the organization for the work done using the printer.
- **Technology support personnel:** This manual contains information that support personnel might need when setting up or using the ImageCard IV printer.
- **Operator:** An operator can perform advanced tasks, such as changing the printhead. These tasks are described in this manual.

Serial numbers

The information in this guide applies to all printers beginning with serial number 201. See “Troubleshooting” on page 8-1 for information about printer serial numbers. This guide describes the current printer driver. (At the time of printing, the current printer driver is the SmartDriver version 5.1.)

About the ImageCard IV printer

The ImageCard IV photo ID printer includes the printer and a printer driver which runs on a PC. The printer uses supplies when printing cards, including:

- Print ribbon
- Blank cards
- Optional topcoat or overlay supply material

The ImageCard IV printer prints full-color or monochrome images on one or both sides of PVC cards. The images printed can include photos, text, logos, barcodes and digitized signatures. The printer can perform additional personalization tasks, such as encoding magnetic stripe data and sending data to smart card chips.With the optional overlay station, the printer can apply a durable polyester patch (laminate) to one or both sides of the personalized card. With the optional topcoat station, the printer can apply a protective clear topcoat or a secure holographic topcoat to the surface of the

card. Magnetic stripe encoding, smart card programming, overlay, and topcoat are options that can be purchased as part of the printer.

The printer driver receives digital information from a card creation application and processes the data to send to the printer. When the printer receives the data, it prints the card. The driver keeps track of the progress of the card in the printer and sends data for the next card as soon as the printer is ready and the data is available.

See “PC and software specifications” on page 1-9 for more information about the printer driver and the PC on which it runs.

Figure 1-2 shows the external parts of the printer.

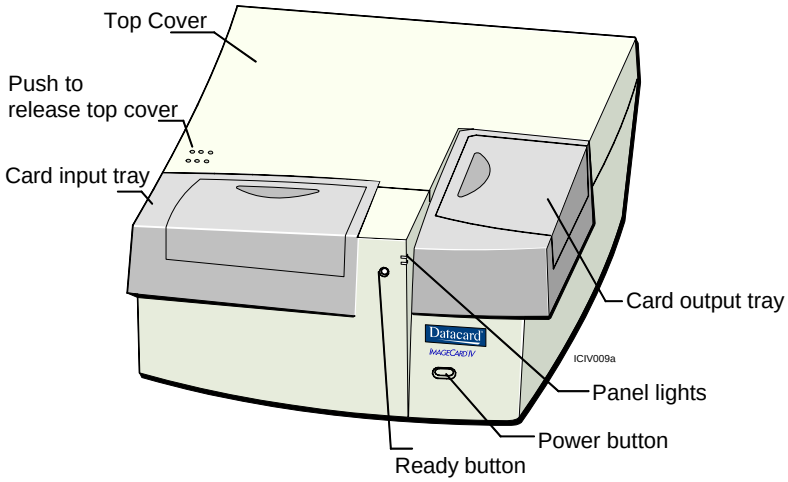


Figure 1-2: The ImageCard IV photo ID printer

Figure 1-3 shows the back of the printer:

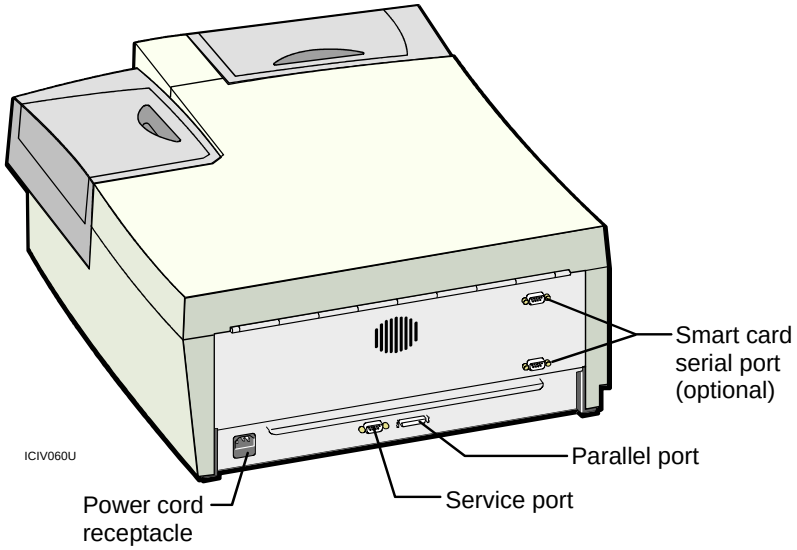


Figure 1-3: The back of the ImageCard IV photo ID printer

Features of the ImageCard IV printer include:

- **Card input and output trays**

  Whenever you print a card, the printer automatically picks a card from the card input tray, and then moves it to the card output tray when the card is complete. The card output tray includes a reject bin for canceled, rejected, or incomplete cards.

  Each tray holds up to 250 cards (with a nominal thickness of 0.030 inches (0.76 mm)). The large capacity reduces the need to handle cards. Handling cards takes time, and excess handling of unprinted cards can reduce print quality on the card.

  The input and output trays are removable. The removable trays allow you to move card stock and completed cards to a secure location when the printer is not in use. If you use the ImageCard IV printer to produce more than one type of card with different card stock, the removable tray also allows you to have one input tray and one output tray for each type of card stock you use.

- **Supply cartridges**

  Supplies, including print ribbon and cleaning tape, are loaded in cartridges for easy replacement. With cartridges, the operator can easily remove used supplies and replace them with new supplies. The ImageCard IV optional topcoat and overlay stations also use supply cartridges.

  You can also purchase additional supply cartridges. With additional cartridges, the operator can load new supplies in one cartridge while the printer is operating with another cartridge in place. If you use the ImageCard IV printer to produce more than one type of card and have additional cartridges, you can keep supplies for each type of card loaded in its own cartridge so you can quickly switch supply cartridges.

- **Automatic card cleaning**

  Card stock has dust and plastic particles on it. To prevent these particles from getting into the printer and damaging the printhead or reducing card quality, each card is automatically cleaned as soon as it is picked.

  Any particles removed from the cards are transferred from the cleaning rollers to the cleaning tape at an interval you select, such as after every 20 cards picked. The cleaning tape captures the particles so they do not harm cards or the printer.

  The ImageCard IV printer also uses a cleaning card and cleaning pen. Use them to keep internal components of the printer clean to preserve printer performance and card quality.

- **Replaceable printhead cartridge**

  The printhead is subject to wear and has a direct impact on print quality. To keep the printer operational while providing the print quality needed, the printhead can be replaced by the administrator or operator in just a few minutes. Select the printhead for the type of card printing you do; color or monochrome.

- **Messages**

  The printer driver monitors the printer and displays a descriptive message when a condition occurs in the printer that the operator needs to know about. Each message briefly describes the situation and provides a suggested action.

Messages also include help, so the operator can follow illustrated steps for correcting the condition causing the message.

- **Modular stations**

  The printer has a modular design so that major functions, such as card input, card cleaning, printing, and card output, are each contained in their own station. Each station is easy to use and is independent of other stations. When messages are displayed, they identify the station affected, so you know exactly where to take action. Figure 1-4 identifies the stations and modules in the printer. All stations or modules in *italic* type are options.

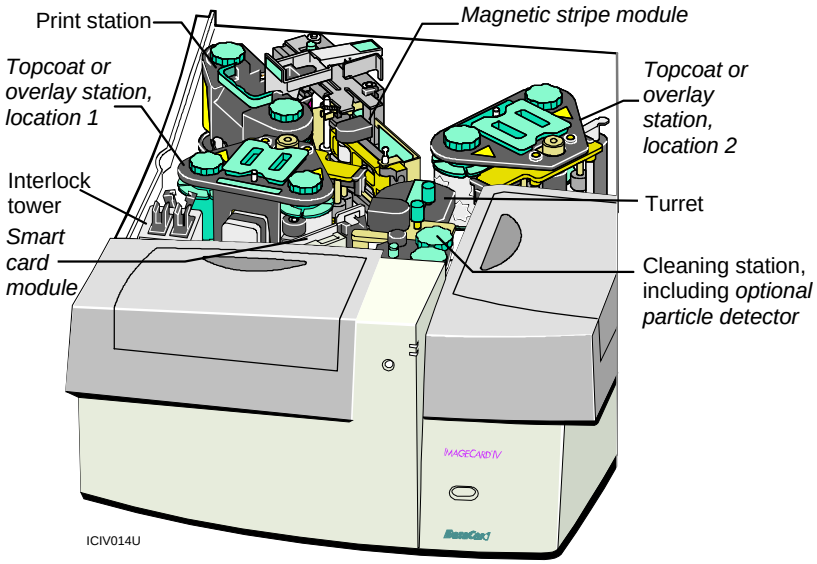


Figure 1-4: ImageCard IV printer stations and modules

- **Color-coded user controls**

  Internal parts of the printer that you or the operator use are colored green to make them easy to identify. The handles on the print ribbon cartridge and cleaning tape cartridge are green. You use these often when loading supplies. Controls you might use to fix problems, such as knobs used to clear a jammed card, are also green. The light-colored handles and knobs in Figure 1-3 are user controls.

ImageCard IV printer options

The ImageCard IV printer can be purchased with one or more of the following options installed:

- **Locking cover and card trays**

  The lock restricts access to card stock, supplies, and completed cards in the printer. It secures the printer cover in the closed position, along with the input and output trays and their covers.

- **Particle detection**

  Card stock might have particles embedded in the plastic, which can cause problems with printing. The particle detector identifies cards with embedded particles and rejects them.

  While the particle detector adapts to smart card chips or other features that might be on the card, at times a feature (such as a signature panel) might be detected as a particle. To allow for such features, you can set the particle detection sensitivity. As you lower the sensitivity, you increase the chance of not detecting potentially damaging particles.

- **Magnetic stripe encoding module**

  The magnetic stripe encoding module is installed in-line with the print operation. It encodes data on the magnetic stripe and then verifies the data before the graphics and photos are printed on the card.

- **Smart card module**

  The smart card module initializes and programs the smart card chip on a card. The smart card application on the PC uses the application programming interface (API) to request that a card be positioned in the smart card module. After the card is in position, the smart card application handles all data sent to the smart card chip through a separate serial cable. When that process is successfully completed, personalization continues and the driver manages communication and processing. The ImageCard IV printer can have a contact smart card module, a contactless (radio) module, or both modules. It can also have a contact station used with an external coupler.

- **Overlay station**

  The overlay station applies a protective, die-cut laminate (polyester patch) to the card after it has been personalized. The laminate provides a durable and long-lasting protective surface to the card.

- **Topcoat station**

  The topcoat station applies a protective film, with or without a hologram, to a card without a printed topcoat. Topcoats provide protection to the printed card surface. Holographic topcoat applies a tamper-evident image to the card to enhance security.

See “Supplies and cards” on page B-1 for information about the overlay and topcoat supplies available.

How options are identified in this manual

This manual describes all of the features of the ImageCard IV printer, including all the options. Because many printers do not have all options, the following method is used to help you identify information that applies to an option.

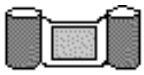
The icons for each option are:

Locking cover and card trays

Magnetic stripe encoding module

Smart card module

Topcoat station



Overlay station

When you see the icon for an option, use the section or follow the step if you have the option installed in your printer. If your printer does not have the option, you can ignore the section or step.

The topcoat and overlay stations can occupy either option location in the printer. The option locations are:

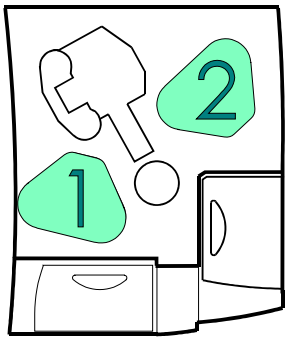


Figure 1-5: Option locations

How the printer works

The ImageCard IV printer produces personalized cards. The following describes the process used to print cards:

The numbers in Figure 1-6 illustrate each step.

1 The printing process begins with a card creation application running on a PC. In a card creation application, you assemble the elements of the card design. The elements can include a photo, logo, text (name, identifying number, and so on) and perhaps data to print as a barcode, encode on a magnetic stripe, or program in a smart card.

2 When you select the print button, the card data is sent to the printer driver, which prepares the data for the printer.

3 The printer driver sends the data, along with control information, to the printer.

4 The printer starts the job by picking a card from the card input tray.

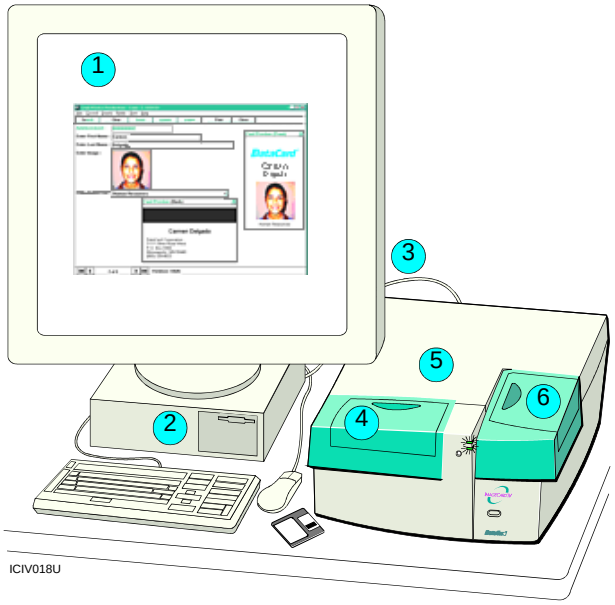


Figure 1-6: How the printer works

5 Inside the printer, the following happens:

- The card passes through the cleaning rollers. If the printer includes an optional particle detector, the card passes through that module also.
- The card moves to the turret, which positions the card at the first station to process it.
- A smart card chip, if the module is present, is programmed first. The card is moved again to the turret which feeds it to the print station.
- A magnetic stripe, if the module is present, is usually encoded next.

- The full-color images are printed using a dye-diffusion, thermal-transfer printing process. True-black images such as monochrome images or barcodes are printed using a mass transfer process.
- If both sides of the card are printed (duplex printing) the card moves to the turret, which turns the card and moves it back into the print station.
- When printing is complete, the card moves to the turret, which delivers it to the next station.
- Topcoat, if used, is applied over the personalized information on the card by the topcoat station.
- Laminate, if used, is applied over the personalized information on the card and over topcoat if it is used, by the overlay station.

6 When all processing steps are complete, the turret moves the card to the card output tray where it is stored until it is removed.

PC and software specifications

The ImageCard IV 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 ImageCard IV 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, such as Acrobat Reader, 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 one of the following ports or connections:
  - An ECP parallel port
    - The port should be configured as an ECP port (using the PC's BIOS). If the existing parallel port is not ECP capable, obtain and install an ECP capable parallel port for printer use. For information on configuring the parallel port, “PC port settings” on page C-1.
    - If your card creation application uses a security key, put the security key on a different parallel port, if available. The security key can be on a compatible-mode (IBM AT-mode) port. The printer data cable must remain on the ECP parallel port (usually LPT1). You might receive

"security key not found" messages, "parallel port data error" messages, or might notice that the card creation application operates slowly. If the security key requires a compatible-mode port, obtain and install a separate parallel port so you have a compatible-mode port for the security key and an ECP port for the printer.

- Some parallel communication devices use a cable with a plug that allows another device to be attached, so that two parallel devices are attached to one PC parallel port, known as a pass-through or piggy-back plug. The printer and printer driver cannot communicate reliably through such a plug. Install a second parallel port in the PC if needed.

– 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 operating systems:
  – Windows Me (recommended)

  The Windows Me printer driver is also designed to work on Windows 98 or Windows 98 Second Edition.

  – Windows XP with service pack 1 (recommended)
  – Windows 2000 with service pack 3
  – Windows NT 4.0 with service pack 5 or higher

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.

Who to call for assistance

If you work with a Datacard-authorized dealer, distributor, or value-added reseller, contact them for assistance. A value-added reseller provides the ImageCard IV printer as part of an overall system.

If any contents of the box are missing, contact your Datacard-authorized dealer, distributor or reseller. If you purchased your printer directly from Datacard, contact Datacard. Contact the Datacard Customer Care Center at 1.800.328.3996 for service in the United Stated and Canada. For worldwide service, call the Datacard Customer Care Center directly at 952.988.2316. Make sure you have the serial number, located inside the printer, when you call (see "Troubleshooting" on page 8-1).

Getting started

2

This section describes what to do before installing the Datacard® ImageCard® IV photo ID printer. It describes:

- General requirements for using the printer
- Selecting the site
- Unpacking the printer
- Supplies and tools to use with the printer

General requirements

When choosing a site for the ImageCard IV printer and its supplies, consider the following general requirements:

- Keep all dust, dirt, food, liquids, etc. away from the ImageCard IV printer at all times.
- Keep the top cover closed at all times, except when changing supplies, fixing problems, or performing maintenance.
- 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 ImageCard IV printer.
- Do not block the left-side air vent or rear fan opening on the ImageCard IV printer.
- Place the ImageCard IV printer on a stable platform; keep it off the floor.
- Place the ImageCard IV printer away from direct sunlight.
- Place the ImageCard IV printer away from heating ducts, blowers, or other air vents.
- Do not use the ImageCard IV printer for purposes other than its intended use.
- When cleaning around the ImageCard IV printer, prevent debris from entering the printer.
- Place the ImageCard IV printer in a clean office environment, protected from any type of construction.
- Store all supplies (ribbons, cards, etc.) in the original packaging until loaded in the cartridges. Keep the original packaging closed.
- Store all supplies in a clean, cool, dry location. See “Supply roll storage” on page B-6 for information about the storage environment for ImageCard IV supplies.

Selecting the site

After meeting general requirements, the site for the ImageCard IV printer should meet the electrical, physical, and environmental requirements of the printer. Finally, be sure to select an appropriate site for printer supplies.

Electrical requirements

The ImageCard IV printer requires the following electrical conditions for optimal performance:

- 90-254 VAC at 50/60 Hz (The ImageCard IV printer automatically adjusts to any power within this range.)

- Single phase, 3-wire grounded receptacle only

The maximum input current for the ImageCard IV printer is 5 amps at 100 VAC applied.

Physical requirements

The ImageCard IV printer requires an environment that accommodates its physical dimensions and weight.

The printer weighs between 60 and 75 pounds or 27.3 and 34.1 kilograms. The weight varies depending on the options installed in the printer.

The surface holding the printer might also need to bear the weight of other equipment such as a PC and camera.

The dimensions are:

- Width of 21.8 inches (54.4 cm)
- Depth of 26 inches (64.8 cm)
- Height of 11 inches (27.5 cm)

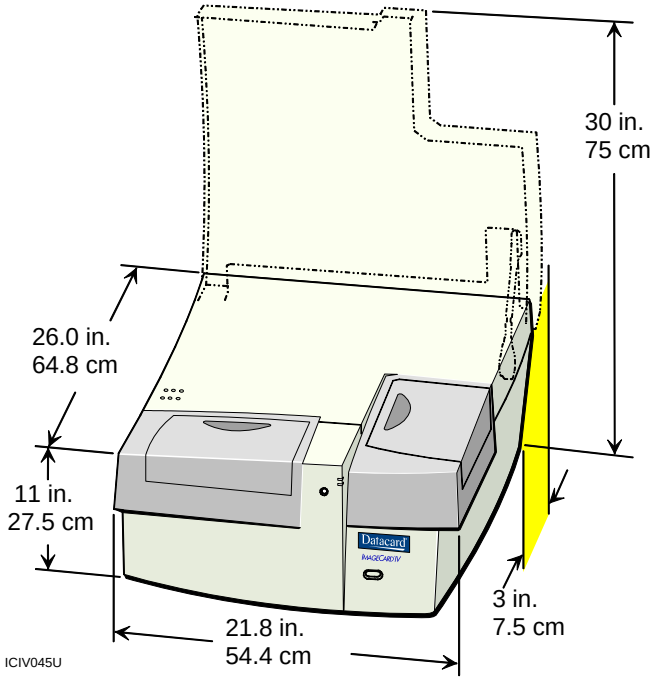


Figure 1-1: ImageCard IV dimensions and clearance

The clearance required is:

- 3 inches (7.5 cm) in back of the printer, for an overall depth of 29 inches (72 cm).
- 19 inches (48.3 cm) above the printer to allow the cover to open, for an overall height from the work surface of 30 inches (75 cm).

Environmental requirements

The ImageCard IV printer requires the following environmental conditions for optimal operation:

- Operating relative humidity: 20% to 80% non-condensing
- Operating temperature range: 55° F to 80° F (13° C to 27° C)

If you store the ImageCard IV printer, provide an environment with the following conditions:

- Storage relative humidity: 20% to 80% non-condensing
- Storage temperature range: 0° F to 100° F (-17.8° C to 37.8° C)

Unpacking the printer

After you select a location that meets the site requirements for the ImageCard IV printer, unpack the printer.

You need a cutting device to unpack the printer.

Make sure you have two or more people to assist with unpacking the printer. Two people can lift the printer while one or more people assist with removing packaging.

Unpack the printer

1 Place the shipping carton on the floor or other firm level surface.

2 Open the end marked “Open This End” by cutting the tape on the shipping carton.

3 Open the inside flap of the shipping carton.

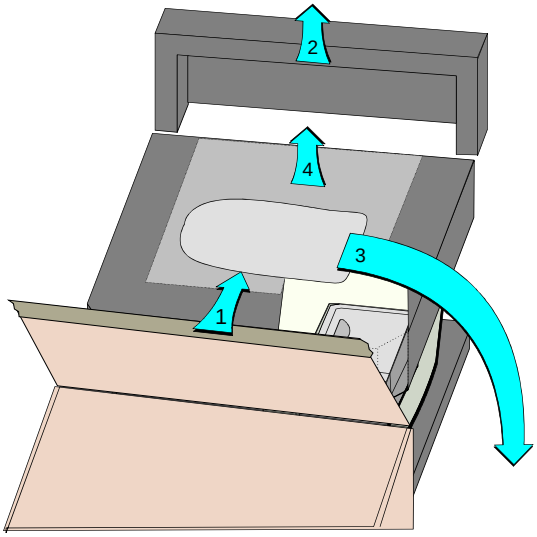


Figure 1-2: Remove the printer from the shipping carton

4 Slide the printer and packing material out of the shipping carton (step 1 in Figure 1-2).

5 Remove the back shipping cushion (step 2 in Figure 1-2).

6 Remove the accessory bag (step 3 in Figure 1-2). Remove this User's Guide from the bag.

7 Remove the top shipping cushions (step 4 in Figure 1-2). Set the shipping cushions aside.

8 Remove all the wrapping around the printer.

⚠ The printer weighs 60 to 75 pounds (27 to 34 kilograms). Use proper lifting techniques. Make sure you have enough people to lift the printer comfortably.

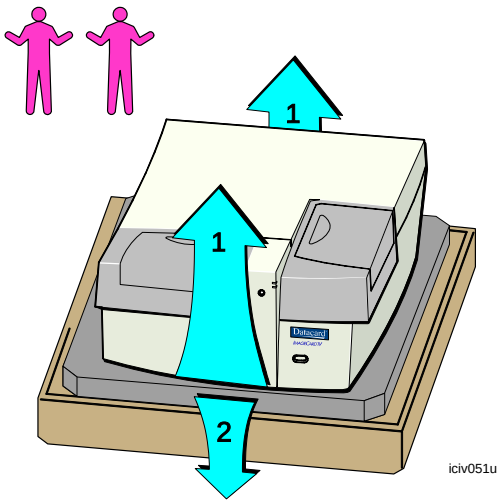


Figure 1-3: Remove the printer from the shipping cushion

9 Lift the printer and move it to its operating location (step 1 in Figure 1-3).

10 Save all packing material, including the shipping carton, shipping cushions, and accessories bag.

11 Push down on the ⁘ corner of the printer's top cover to unlatch it (step 1 in Figure 1-4). Lift the top cover to the fully upright position (step 2 in Figure 1-4).

ⓘ If your printer has a lock, see "Unlocking the cover" on page 3-4 for the steps to unlock the printer. First, check to see if the printer is unlocked.

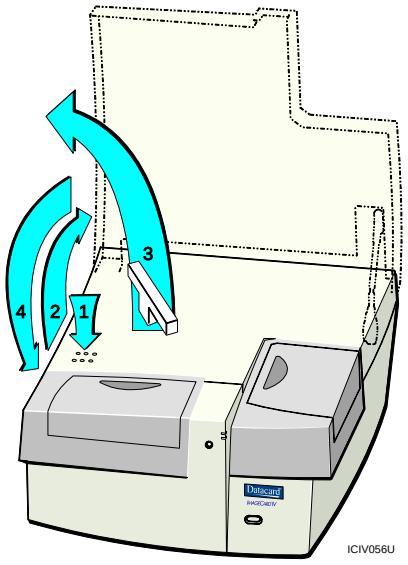


Figure 1-4: Push and lift to open the top cover

12 Remove the internal shipping material from the print station (step 3 in Figure 1-4).

The printer has a pocket on the back wall with sample cards that were printed on this printer in the factory. Leave the cards in place.

13 Close the cover of the printer and press down to latch it.

♦

The printer is shipped with supplies in place, which may not match your intended use. You should be able to continue with printer installation using the supplies installed at the factory. Replace supplies after setup if they do match your intended use. See “Loading supplies” on page 4-1 for instructions.

Contents of the accessories bag

The accessories bag contains the following:

- *User’s Guide for the ImageCard® IV Printer.* The guide tells you how to set up, use, maintain, and fix problems with the ImageCard IV printer.
- Cleaning pen. The cleaning pen can be used to remove deposits from the printhead and optional magnetic stripe head.
- AC power cord. A power cord is ordered with the printer. See “Power cable” on page B-15 for information about available power cords.
- Interface cable. The Interface cable connects the printer and the PC. See “Interface cable” on page B-9 for technical specifications for cables.
- Optional smart card cable(s). The smart card cable connects the smart card module in the printer to the PC's serial port. See “Smart card cable” on page B-15 for technical specifications for cables.

- Blank cards. Twenty-five (25) blank cards or ten (10) blank high-coercivity magnetic stripe cards are provided for testing only. Use them only when asked to by your service representative.
- Input/output tray latching pin. One extra pin, which you can use to secure the input tray or output tray if a pin is lost.
- CD-ROM with the printer driver. It includes installation programs for the printer driver and an electronic Release Notes document for each operating system.
- Warranty. The warranty statement details the terms of the warranty on the printer.
- Declaration of conformity. Declares that the printer meets the standards listed.
- Two keys, if the printer has the lock option installed.
- A cleaning stick for the overlay station, if one is installed.

If supplies were ordered when the printer was ordered, a separately shipped carton might contain the following:

- Cleaning cards, which remove deposits from rollers inside the printer caused by the process of personalizing cards
- Print ribbons
- Laminate supply
- Topcoat supply

If you have not ordered and received supplies, contact your Datacard-authorized representative to order print ribbon, cleaning cards, cleaning tape, and optional supply material. You can also order additional cleaning pens.

For part numbers and more information, see “Supplies and cards” on page B -1 or “Related publications” on page E-1.

Supplies, parts, and tools

This section briefly reviews the supplies, parts, and tools used with the ImageCard IV printer. For details on supplies, see “Supplies and cards” on page B-1.

Supplies

When you use the ImageCard IV printer, use Datacard-approved supplies. The supplies you use depend on the options installed in the printer and your card design. Required supplies include:

- Print ribbon
- Cleaning tape
- Card stock or specialized card stock
- Cleaning cards
- Cleaning pen

The print ribbon, card stock, laminate, and topcoat might require secure storage. Follow your policy for storage of the supplies used to make cards.

Optional supplies include:

- Laminate supply material
- Topcoat supply material
- Cleaning stick

See “Supplies and cards” on page B-1 for details about supplies, including choices available, ordering information, and conditions for storing supplies.

General office supplies might also be used with the ImageCard IV printer, including:

- Office tape to attach ribbon or supply material to cores.
- Clean, soft cloth for general cleaning of the printer.
- As an alternative, isopropyl alcohol for cleaning of the printer.

Parts

You can purchase additional parts that can improve workflow in certain situations. Also, plan to purchase replacement parts.

- You can purchase additional parts, including supply cartridges and card trays, for your ImageCard IV printer. If you make more than one type of card and use different supplies, additional supply cartridges allow you to keep supplies loaded in the cartridge. Additional supply cartridges also can help maintain production rates by allowing the operator to immediately replace an empty cartridge with a full one. The operator can load cartridges while the printer is operating.
- The ImageCard IV printer uses a 5 ampere, slow blow, 250 volt 5x20 fuse, available from Datacard or any electronics store. Stocking a spare fuse can help to maintain production.
- The ImageCard IV printer has a replaceable printhead. The printhead affects card quality and is subject to wear and damage.

See “Supplies and cards” on page B-1 for details about supplies, including choices available and ordering information.

Tools

When you use the ImageCard IV printer, you might also use the following tools.

- A vacuum cleaner with attachments to clean the printer.
- A cutting device, such as a utility knife, to open the shipping carton.
- Scissors to trim supply material.
- When changing the printhead, use an electrostatic discharge (ESD) strap to prevent static electricity from damaging a printhead. An ESD strap is available from Datacard or from any electronics store. See “Anti-static wrist strap” on page B-13 for information about obtaining an ESD strap from Datacard.

Setting up the printer

3

This chapter describes how to set up the printer and get it running after it has been unpacked. It describes:

- How to connect the power cord, the interface cable, and the optional smart card cable(s)
- How to unlock the optional locking cover
- How to load cards with the correct orientation in the input tray
- How to set the input tray and debower for the cards you use
- How to install the printer driver
- How to change settings for a successful printer installation
- How to make a sample card (after successfully completing installation) and how to judge the quality of the card

Connecting the printer

This section explains how to connect the printer to the PC that runs the printer driver and then to a power source. It also explains how to connect the optional smart card cable.

If the printer is connected over a network, see the *e-Guide for ImageCard IV Printers* for connection information.

Connect communication cables

1 Attach the interface cable to the ECP parallel port on the PC (step 1 in Figure 3-1).

The interface cable must be a shielded, Type C, IEEE 1284 parallel port cable, up to a maximum of 6.5 feet (2 meters) long.

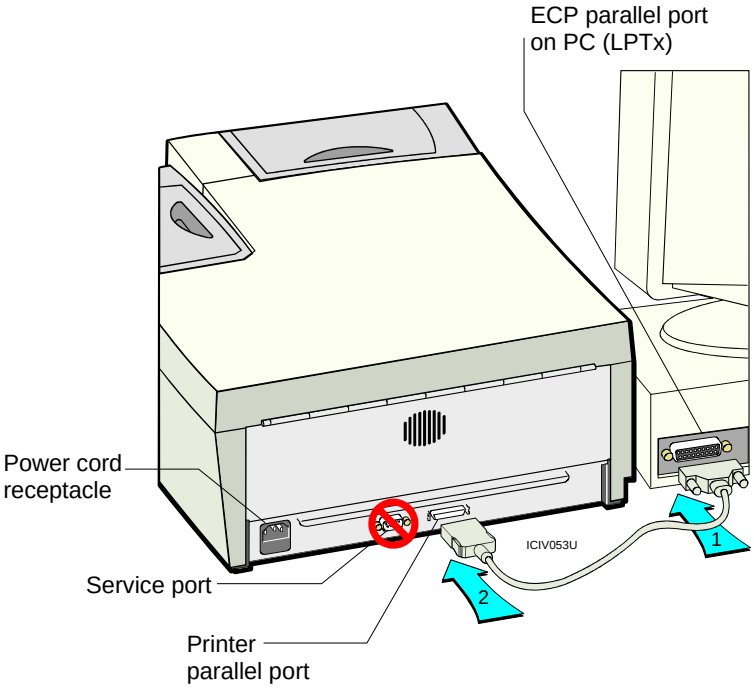


Figure 3-1: Attach the interface cable

2 Attach the other end of the interface cable to the printer (step 2 in Figure 3-1).

If the PC has more than one parallel port, make sure you use the ECP-capable parallel port on the PC. Also, note whether the port is LPT1 or LPT2, so you can specify the port when installing the printer driver.

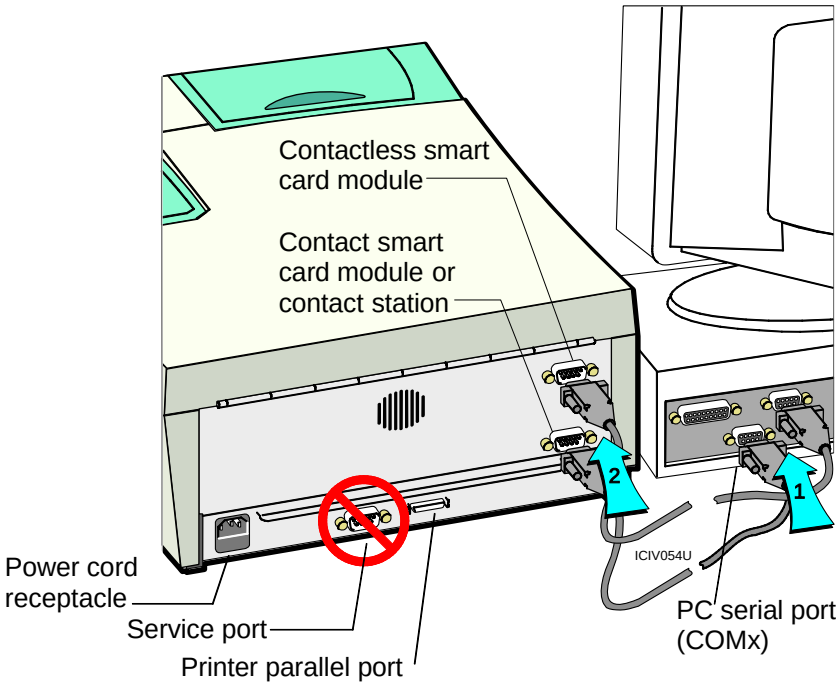


Figure 3-2: Attach the optional smart card serial cable(s)

3 If your printer has a smart card module, the ports to use correspond to the module installed:

- The lower port is installed for a contact smart card module or a contact station.
- The upper port is installed for a contactless module.
- Both ports are installed for a module containing both contactless (upper port) and contact couplers (lower port).

The smart card serial cable must be a shielded DB9 serial cable, up to 3 meters long maximum.

4 Attach the smart card serial cable(s):

a Attach the serial cable to the serial port on the PC (step 1 in Figure 3-2).

b Attach the other end of the smart card serial cable to the printer (step 2 in Figure 3-2).

c If the printer includes both contact and contactless couplers, attach the second smart card serial cable to the printer and PC as described in steps a and b.

If the PC has more than one serial port, attach the serial cable to the serial port for the smart card application. See information with your smart card application for the correct port to use.

Verify that serial port settings are correct using the steps in “PC port settings” on page C-1.

♦

Connect the power cord

1 Attach the power cord to the power receptacle on the back of the printer (step 1 in Figure 3-3).

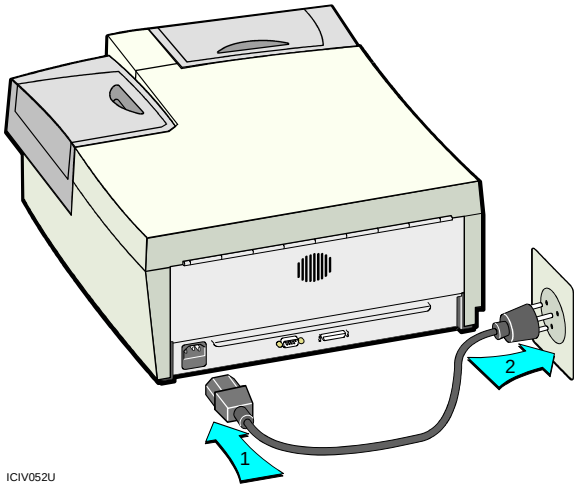


Figure 3-3: Attach the power cord

2 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 (step 2 in Figure 3-3).

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

♦

Unlocking the cover

If your printer has an optional locking cover, follow this procedure to unlock the cover. The printer might be unlocked for shipping.

Unlock the cover

1 Insert the key into the lock (step 1 in Figure 3-4). The key fits the lock only one way.

2 Push down and turn the keylock one-quarter turn clockwise to open the lock (step 2 in Figure 3-4).

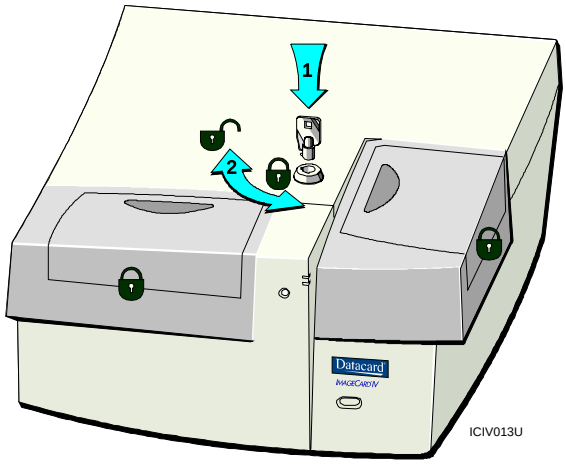


Figure 3-4: Turn key to lock or unlock printer

When the printer's top cover is unlocked, the input tray cover, input tray, output tray cover, and output tray can be opened or removed. The lock does not affect the ability to operate the printer.

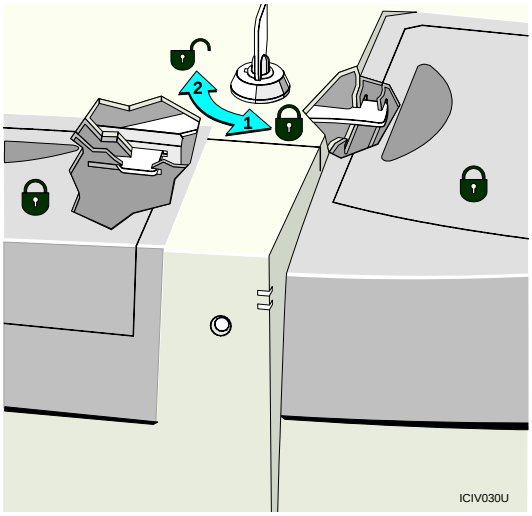


Figure 3-5: Lock secures cover, trays, and tray covers

♦

Loading cards

Load cards when beginning work or when the card tray is low on cards or empty. You can load cards when the printer power is on or off. You can also load cards while the printer is printing.

Load cards

1 If the printer is printing while you load cards, press the Ready button to pause the printer (Figure 5-1).

2 Lift the input tray cover and set aside (step 1 in Figure 3-7).

3 Hold the card tray and slide the card pusher to the left (step 2 in Figure 3-7). Latch the card pusher in the notch on the bottom of the card tray.

Do not touch the surface of cards before printing them. Handle cards by the edges or wear gloves to protect cards. Oils on hands can cause discolored printing.

4 Fan cards to separate the edges of cards (see Figure 3-6).

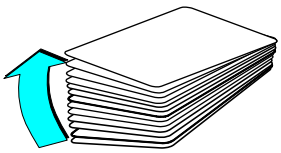


Figure 3-6: Fan cards

5 Align cards correctly. While facing the printer:

- Place the front surface of the card to the left.
- Place the magnetic stripe toward the top and facing to the right.
- Place the smart card chip toward the top and facing left.

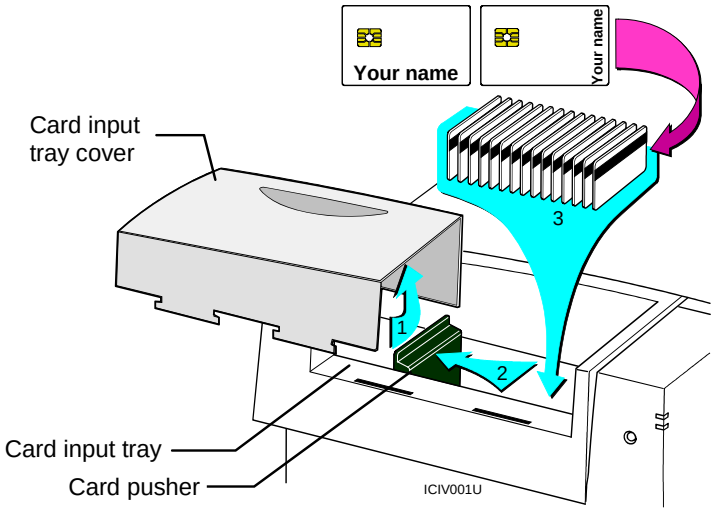


Figure 3-7: Load cards in the ImageCard IV printer

6 Place up to 250 cards in the space created by moving the card pusher back (step 3 in Figure 3-7).

If your cards are thicker or thinner than 0.030 inch (0.76 mm), the maximum number of cards you can load changes.

⚠ If you use a topcoat station, an overlay station or both, use composite cards with a nominal thickness of at least 0.030 inch (0.76 mm).

7 Hold the card tray and release the card pusher to hold cards in place.

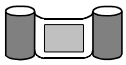
8 Replace the input tray cover.

9 If your printer has a locking cover, press down and turn the keylock one-quarter turn counterclockwise .

10 If you paused the printer, press the Ready button to resume printer operation.

♦

Verifying the debower position



The debower in the optional topcoat or overlay station should be set for the type of cards you print. The debower assures that the heat used to apply the topcoat or laminate does not leave cards bowed or curled.

ⓘ Some optional topcoat stations do not have a debower.

Set the debower

⚠ Do not use the debower in the On position with proximity cards or smart cards.

ⓘ Make sure power to the printer is off.

ⓘ Unlock the printer if needed.

1 Push down on the corner of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

⚠ When the top cover opens, the interlock switch removes power from all motors and fans. If overlay or topcoat stations are installed, power is removed from the heaters. The overlay or topcoat stations remain HOT and require time to cool down.

2 Lift the handle for the debower and move it to the desired position for the card type. Figure 3-8 shows the on and off positions for the debower.

Card or module type	Debower position
0.030 inch (0.76 mm) card	on
0.050 (1.27 mm) cards	off
Smart card	off
Proximity card	off
Topcoat module	off

⚠ If you use a topcoat or overlay station, you must use cards that are at least 0.030 inch or 0.760 mm thick.

ⓘ Make sure the debower latch drops into position.

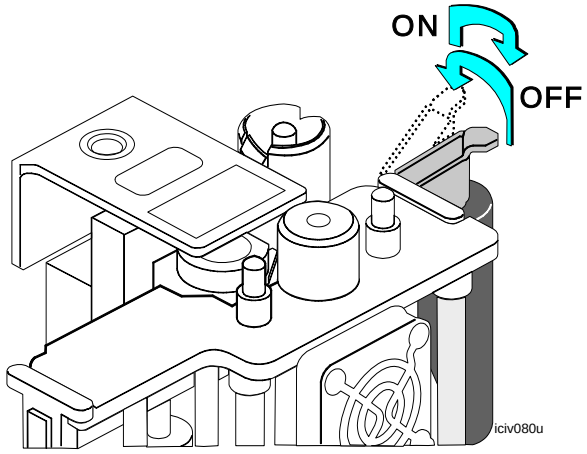


Figure 3-8: Lift the handle, move the debower, and lower it

3 Close the cover of the printer. If needed, lock the printer.

ⓘ If you are setting up the printer, check the bow on the test card when you make it. If you are changing this setting after running the printer with other cards, make several test or sample cards to be sure the setting produces the result you want.

ⓘ If you are switching to proximity cards or use smart cards, be sure to test the function of the card after applying the overlay or topcoat.

♦

Printing thicker or thinner cards

The ImageCard IV printer can print cards that are as thin as 0.020 inch (0.5 mm or 500 microns) and as thick as 0.050 inch (1.3 mm). (These are nominal dimensions, and cards can be 10 percent thicker or thinner than the stated dimension.)

ⓘ If you use a topcoat station, an overlay station, or both, purchase and use composite cards with a nominal thickness of at least 0.030 inch (0.76 mm).

The ImageCard IV printer is factory-set for cards that are 0.030 inch (0.76 mm) thick. You might need to change the card separator so that just one card is picked each time the printer starts printing a card.

Go to the “Installing the printer driver” steps later in this chapter if you plan to print 0.030 inch (0.76 mm) thick cards.

Set the card separator

1 Remove the cover of the input tray. If the tray has a latch, turn the latch one-quarter turn counterclockwise to release the tray (Figure 3-9).

2 Lift the input tray and set aside (Figure 3-9).

Do not tip the tray upside down. The latching pin can fall out and the pin is required for the tray to operate properly.

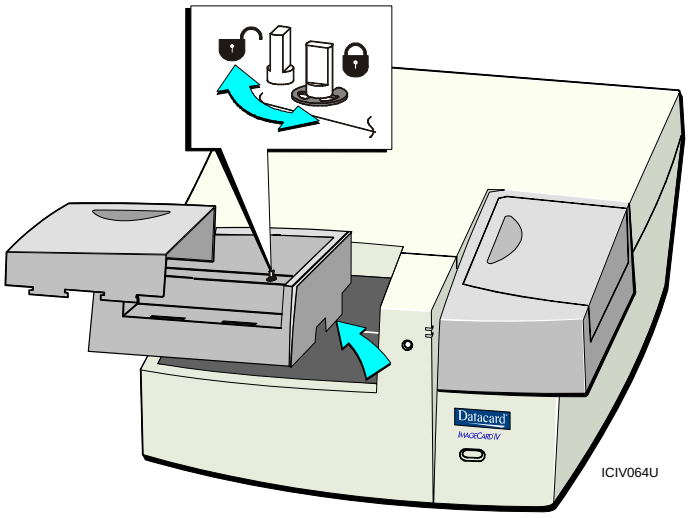


Figure 3-9: Remove the card input tray

3 Refer to the packaging for your card stock to determine the nominal thickness of the cards you use. This procedure assumes that the printer is set for 0.030 inch (0.76 mm), and explains how to adjust for cards that are thicker or thinner.

Use 2 or 3 cards for this setting.

4 Place a card of the desired thickness between the guide rollers (Figure 3-10). Then, do the following:

– If the card slides past the separator and you can see extra space between the card and the separator, turn the card separator knob counterclockwise until the separator touches the card.

– Then turn the card separator knob clockwise one-quarter turn to allow for normal variations in thickness.

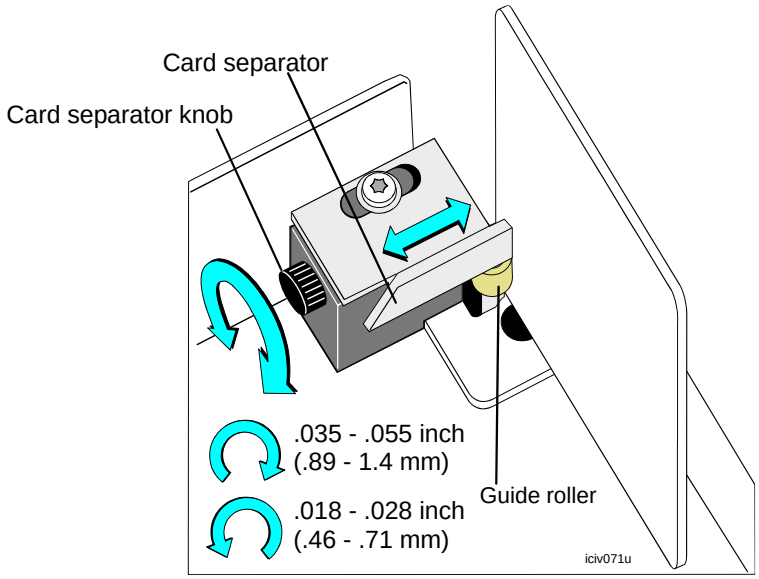


Figure 3-10: Set the card thickness

– If the card cannot move past the separator, turn the card separator knob clockwise ↻ until the card can slide past the separator.

– Then, turn the card separator knob clockwise ↻ one-quarter turn to allow for normal variations in thickness.

5 Check the setting using a few more cards of the desired thickness. Push a card between the guide rollers, so the edge is past the card separator. Remove your hand from the card to determine if the setting is correct.

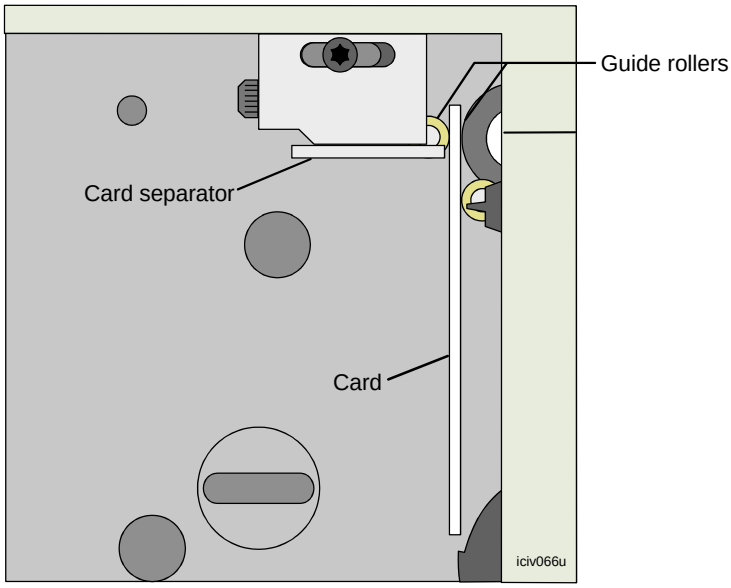


Figure 3-11: Correct card thickness setting

Use the following guidelines to decide whether the setting is correct:

- If the card almost touches the card separator, you have successfully completed the setting (Figure 3-11). Continue with step 6.
- If the card touches the card separator and the card appears bent, the setting is too narrow. Return to step 3 to set the card separator again.
- If the card does not touch the card separator, take a third card of the desired thickness and insert it next to the card between the guide rollers. If both cards fit without appearing bent, the setting is too wide. Return to step 4 to set the card separator again.

6 Replace the card input tray. If the tray has a latch, turn the latch one-quarter turn clockwise to latch the tray.

7 Make several test or sample cards. You might need to repeat these steps because small variations can affect whether one or two cards are picked. Watch for the following:

- The printer might pick cards differently when the card input tray is in place.
- The printer might pick cards differently when the card tray is full or when it is almost empty.
- The card stock might have more variation than the two cards used in making the setting.

♦

Installing the printer driver

The ImageCard IV printer includes 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)
- Windows NT 4.0, with Service Pack 5 or 6

See “PC and software specifications” on page 1-9 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. See the *e-Guide for ImageCard IV Printers* for instructions on installing from diskettes or a downloaded file.
- If you have installed the printer driver and want to update to the most recent driver, follow the steps in the *e-Guide for ImageCard IV Printers*.

- Several other connection methods are available, including printer sharing over a network, and installing two printers on parallel ports on a PC. See the *e-Guide for ImageCard IV Printers* for information on these installation alternatives.
- You can also directly connect the printer to a network using a print server. See the *SmartDriver Direct Network Guide* for more information.
- See the *e-Guide for ImageCard IV Printers* for information on printer pooling on the Windows 2000 and XP operating systems.

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

- Parallel port and Windows 2000 or XP all operating system
  - "Install the printer driver to a parallel port on Windows XP/2000" on page 3-12
- Parallel port and Windows ME, 98 or NT operating system
  - "Install the printer driver to a parallel port on Windows ME, 98 or NT" on page 3-14

Install the printer driver to a parallel port on Windows XP/2000

1 Close all applications. Do not close Windows.

2 Log in as the Administrator when you install the printer driver.

3 Make sure the printer is powered on and ready.

4 Make sure the printer is connected to the PC.

5 Insert the CD-ROM in the PC's drive.

6 If the operating system detects the printer and displays the Found/Detected New Hardware Wizard, go to step 12.

Figure 3-12: Datacard Group program

7 Click “To Install Driver.” The License Agreement page appears.

8 Click “Agree” to accept the license agreement. The “Connect the Printer and PC” page appears.

9 Click “Parallel Cable (LPT).” The “To use a Parallel Cable (LPT)” page appears.

10 Click “Add Printer” to start the Add Printer Wizard.

11 Click “Next” on the first page of the Add Printer Wizard.

12 Make sure the correct choices are checked on the Add Printer Wizard:

- For Windows 2000, check “Local printer” and “Automatically detect and install . . .”
- For Windows XP, check “Install the software automatically (recommended)”

13 Click “Next.” The PC searches the CD-ROM for files to install. For Windows XP, go to step 16.

14 Make sure that “Search for a suitable driver . . . “ is selected, and then click Next.

15 Make sure that “CD-ROM drives” is selected and then click Next.

16 When the wizard has found the dspnp.inf file, the Next button is enabled. Click Next.

17 A Windows message appears:

- For 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.
- For Windows XP, the Windows Logo Signing message appears. Click “Continue Anyway” 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.

18 The installation program copies files to the PC and updates entries for the printer. Click “Finish” to close the wizard.

19 Be sure to restart Windows before performing any other actions. If Windows does not restart automatically, do the following:

a Click “Start” to display the Windows Start menu.

b Click “Shut Down” to display the Shut Down Windows dialog box.

c Choose “Restart” from the list and click OK to restart Windows.

20 When Windows has restarted, remove and insert the CD-ROM in the PC's drive. The Datacard Group window opens automatically.

If the installation program does not start, make sure the CD-ROM is installed correctly. If needed, start the Demo32.exe application on the CD-ROM.

21 Click “User Information” to view the Release Notes (optional) and install information.

22 From the User Information page, click “View Release Notes” if you want to view detailed information about the printer driver installed. The WordPad application opens and displays the release notes. Click the Close or Exit button when you are done viewing release notes.

23 From the User Information page, click “e-Guide for ImageCard IV Printers.” The SmartDriver e-Guide Installation dialog box opens.

24 Click OK to start the self-extraction (zip) program. The WinZip . . . dialog box appears.

25 Use the default path to extract the files (or specify another location). Click Unzip to extract files and then click OK to start the e-Guide installation program.

26 The installation program detects whether the Adobe Acrobat Reader program is installed on the PC. If it is not, the installation program reminds you to install it. Continue with these steps and be sure to perform step 28.

Click OK to close the message box if it appears.

27 The program installs the files for the e-Guide for ImageCard IV Printers. Click Finish when it is complete.

28 If a message appeared as described in step 26, click “Acrobat Reader” on the User Information page. Follow the prompts to install Acrobat Reader.

29 If you will be using more than one type of printer on this PC, install e-Guides for each printer type, following steps 20 through 25.

The SmartDriver supports the Magna Platinum series printer, the SP35 card printer, Magna Class printer with AIT, the Select Class printer with AIT, the Select Platinum series printer, and the ImageCard IV printer.

30 Click Exit to close the Datacard Group program, and then remove the CD-ROM from the PC’s drive.

31 Driver installation is complete. Go to “Changing required printer settings” on page 3-17, and then print a sample card to verify driver installation. See “Printing sample cards” on page 3-18.

♦

Install the printer driver to a parallel port on Windows ME, 98 or NT

1 Close all applications. Do not close Windows.

2 Make sure the printer is connected to the PC.

3 Make sure the printer is powered on.

For Windows NT, log in as the Administrator when you install the printer driver.

4 With Windows running, insert the CD-ROM in the PC's drive. The Datacard Group window opens automatically.

If the installation program does not start, make sure the CD-ROM is installed correctly. If needed, start the Demo32.exe application on the CD-ROM.

Figure 3-13: Driver installation program

5 Click “Install Driver.” The SmartDriver installation program starts.

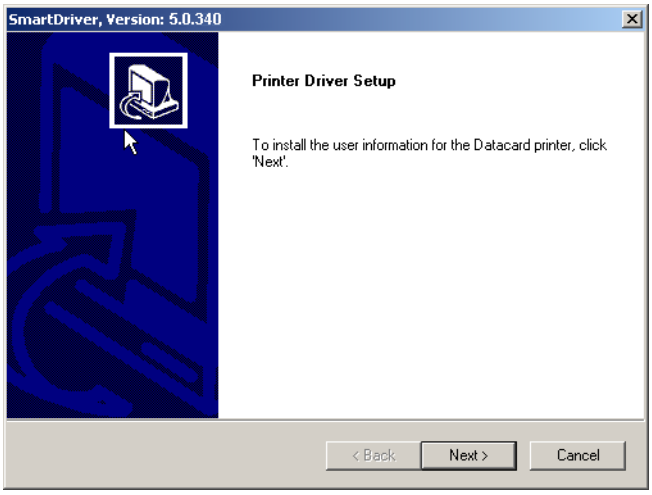


Figure 3-14: SmartDriver installation dialog box

6 Click Next on the first Printer Driver Setup dialog box.

The installation program automatically detects the operating system on your PC and selects the driver for that operating system.

7 Review the License Agreement and click Yes to continue.

If you used a different sequence to start installation, you might have a slightly different sequence of prompts.

8 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.

9 Choose the e-Guides to install. You can choose the Magna e-Guide, the Select e-Guide, ImageCard IV e-Guide, or the SP35 e-Guide. Install the ImageCard IV e-Guide. (You can install additional e-Guides if you are likely to use more than one type of printer with this PC.) Click Next to install the e-Guide(s) you selected.

10 Use the default name for the printer or enter a name of your choice. Click Next.

11 Select the port to which the printer is connected and click Next.

Select only one port for printer connection.

12 Select whether this printer should be the default printer.

The small page size for cards might cause unexpected results with some applications if the ImageCard IV printer is the default.

13 Click Next to copy the files to the PC and update entries to enable the printer.

14 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. If you see this prompt, make sure Yes is chosen and then click Next to install it.

15 Follow the prompts to install Acrobat Reader.

16 The Restart Windows dialog box appears after a moment.

17 Click Finish to close the installation. The installation program will restart Windows when you click Finish.

18 Driver installation is complete. Go to “Changing required printer settings” on page 3-17, and then print a sample card to verify installation. See “Printing sample cards” on page 3-18.

On Windows Me and 98, the Add New Hardware Wizard can appear when you restart Windows. Windows will associate the printer and driver, and close the Add New Hardware Wizard automatically.

♦

Changing required printer settings

After installing the printer driver, there are several other tasks you might need to perform. The required tasks are:

- For Windows 2000, XP, and NT, set permissions to the printer for other users of the PC. See “Setting printer permissions” on page 3-20 for the steps to follow.
- For Windows 2000, XP, and NT, make sure that users of the printer have permission to write files to the temp file location specified in the PC configuration. If the temp file location is not specified, the driver uses the root location, such as Win2K or WINNT. See Windows help for more information.
- View and change settings in the Properties, Default Document Properties, or Printing Preferences dialog box. See “Working with Properties and other driver dialog boxes” on page 6-2 for steps to follow.

  Open the Properties, Printing Preferences, or Default Document Properties dialog box using the Printers window so the settings apply to all applications.

  – Select whether to print on both sides (duplex printing). Select and apply this setting before making other changes.
  – Select the print ribbon type. This setting is optional for a locally attached printer. This setting must be selected for a printer used over a network. See “Print ribbons” on page A-2 for information on supported print ribbons. If the printer has a topcoat or overlay station, select whether to apply the material to the front of the card, the back of the card, or both.
  – If the printer has a magnetic stripe module, select the magnetic stripe coercivity and encoding format.
- For a networked printer, change settings first on the administrative or host PC and then on user or client PCs:
  – Printer type (for shared printers only)
  – Print on both sides
  – Print ribbon type (must match ribbon in the printer)
  – If the printer has a topcoat or overlay station, select whether to apply the material to the front of the card, the back of the card, or both.
  – Mag stripe coercivity and encoding format can be set from the administrative or host PC. The client or user PCs can use the “Use printer settings” values if all cards will use the same encoding format. Make sure that mag stripe settings on all PCs result in readable cards.

  Optional settings, such as orientation and print margin, can also be changed.

♦

Printing sample cards

The printer is shipped with 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.

Print sample cards

1 Begin with the printer powered on and connected to the PC, supplies loaded, the printer driver installed, and Windows running.

2 By default, the Printer Toolbox is open when Windows starts. If needed, double-click the icon for the Printer Toolbox. It is located in the lower right corner of the Windows desktop. See “Using the Printer Toolbox” on page 6-10 if needed.

3 Click the Sample Card button.

The driver identifies the type of printer, whether it prints color or monochrome images, and whether it has a duplex module, 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 and are satisfied that it matches the factory-printed card, you can minimize the Printer Toolbox.

– If you are checking the operation of the printer, see “Problems with card appearance” on page 8-9.

♦

Setup tips

Make sure that:

- The printer's top cover is closed and latched.
- The card input tray and card output tray are in place and latched in place (if the trays have latches).
- Cards are loaded in the card input tray.
- The data cable is connected to the parallel port of the printer and the corresponding port of the PC. Make sure that the ports used for each printer are the same as were installed.
- If the PC has more than one port, the port to which the printer is assigned (such as LPT1) is the same as the port to which it is connected.
- The parallel port (if used) is configured as an ECP parallel port in the PC’s BIOS. See “Setting parallel port values” on page C-5 for more information.

- Supplies are installed in all cartridges and cartridges are loaded correctly. “Loading supplies” on page 4-1 for more information.
- The printer is ready to print. Both panel lights on the printer should be steady green before you send a sample card. “Using the printer” on page 5-1.
- Use the driver sample card, not a card from a card creation application, to verify that the printer and driver are working together.
- For a directly networked printer, see the *SmartDriver Direct Network Guide* for guidance on setting up the printer and PC.
- For a shared printer, see the *e-Guide for ImageCard IV Printers*.

Changing optional settings

Depending on your card design and operating environment, you might change settings for optimal print quality. Print the sample cards before changing optional settings. The optional settings include:

- Set the print margin if needed. The printer has a default of Edge-to-Edge, which is the same as a margin of 0.
- Choose the cleaning interval in the printer driver. See “Working with Properties and other driver dialog boxes” on page 6-2 for steps to follow. You can use the default interval of cleaning after every 20 cards, or select a longer or shorter interval. If you choose a value of 0, the printer driver will not prompt for cleaning. Make sure you clean the printer regularly, such as every time you change ribbon or each work day. For networked printing, the user who prints the most cards should set the cleaning interval (set the cleaning interval to 0 on other PCs).
- Dithering for monochrome (K) printing.
- Fine-tune black (K-panel) printing if you print barcodes or fine text. See“Changing operational settings” on page 6-15 for steps to follow. For networked printers, perform this task from the host or administrative PC.
- Change color settings. After the card design is defined and other components of an identification system are set up, you might want to change color settings for maximum color quality. See the e-Guide for ImageCard IV Printers for steps to follow.
- For a networked printer, most optional settings on the administrative or host PC and the user or client PCs can be changed independently and should match the card design. Settings on the Laminator Settings, Printhead, and Laminator Advanced tabs should be changed only from the host or administrative PC.
- You might also want to change print registration. See “Changing operational settings” on page 6-15 or contact your service provider for guidance.

Setting printer permissions

If the PC to which the printer is attached has other users, set permissions that:

- Make all features of the printer and driver available to users, 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.

Set printer permissions for Windows 2000 and XP

1 From the Windows taskbar select Start, then Settings, and then Printer. The Printers window appears.

2 Highlight the SmartDriver icon by clicking on it once.

3 From the menu bar, select File and then Properties. The Properties dialog box for the SmartDriver appears.

4 Choose the Security tab.

ⓘ If the Security tab is not visible, open any folder and choose Tools:Folder Options from the menu bar. In the Advanced Settings list, make sure "Use simply file-sharing" is not checked. Close the Properties dialog box and open it again to view 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.

♦

Set printer permissions for Windows NT

1 From the Windows taskbar select Start, Settings, and then Printers. The Printers 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 Click the Permissions button to open the Printer Permissions dialog box.

6 Select the Add button to open the Add Users and Groups dialog box.

7 Select the Show Users button.

8 Select the name of the user (or group) to add and click the Add button.

9 From the Type of Access list, select the access:

– For a local user of a local printer or for a user of a directly networked printer:
  - For a user connected to a directly networked printer, select Full Control.
  - For a local user of a printer, select Full Control.
  - For a user who should not print on the printer, select No Access.

  ℹ Other user permissions, such as the Print permission, are not supported

– For a user of a shared printer:
  - For a user of the printer on the PC connected to the printer, select Full Control. 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. (Other user permissions, such as the Print permission, are not supported for local users of the printer driver.)
  - For a user who should not print on the printer, select No Access.
  - For a user connected through a network using Printer Sharing, select Print permission.

10 Select OK to save the change and close the Add Users and Groups window.

11 Repeat steps 6 through 10 to add other users or groups.

12 Select OK to save the changes and close the Printer Permissions window.

♦

Loading supplies

4

This chapter explains how to load supplies in the ImageCard IV printer. It describes:

- How to change the print ribbon
- How to change the cleaning tape
- How to change the laminate (overlay) supply
- How to change the topcoat supply

For information about loading cards, see “Loading cards” on page 3-5.

To ensure nearly uninterrupted operation, you can have additional cartridges for all supplies used in your printer. The additional cartridges can be kept loaded so that empty supplies can immediately be replaced.

Change the print ribbon

This section describes the three steps of changing the print ribbon:

- Remove the print ribbon cartridge
- Load the print ribbon in the cartridge
- Replace the print ribbon cartridge

Removing the print ribbon cartridge

Remove the print ribbon cartridge from the printer when the "print ribbon empty" message appears, or when changing the type of ribbon you use.

If you change the type of print ribbon you use, see the *e-Guide for ImageCard IV Printers* for the complete process to follow.

Remove the print ribbon cartridge

1 Push down on the corner of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

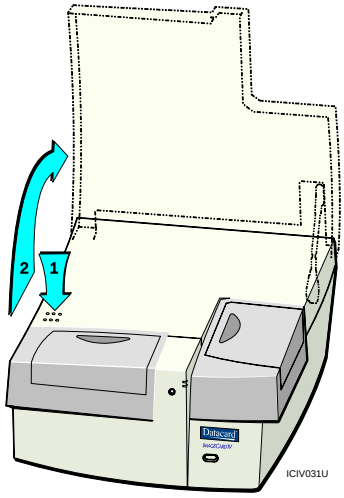


Figure 4-1: Push and lift to open the top cover

When the top cover opens, the interlock switch removes power to all motors and fans. If overlay or topcoat stations are installed, power is removed from the heaters. Overlay or topcoat stations remain HOT.

2 Push on the printhead latch to release the printhead cage (step 1 in Figure 4-2).

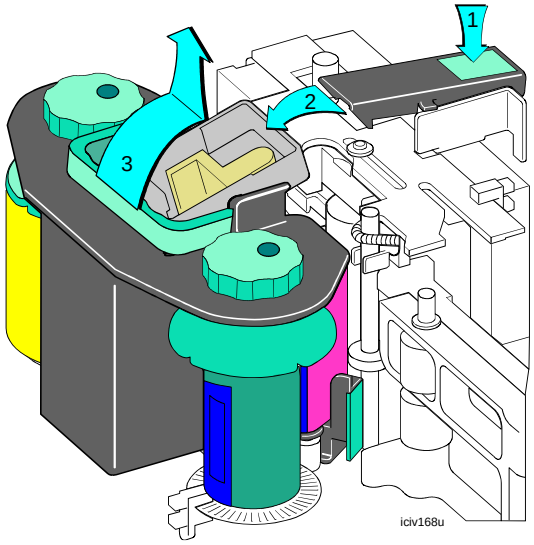


Figure 4-2: Remove the print ribbon cartridge

3 Move the printhead cage to the resting position (step 2 in Figure 4-2).

4 Using the handle, lift the print ribbon cartridge straight up until the cartridge is above the printhead cage (step 3 in Figure 4-2). Remove the cartridge from the printer.

Some cartridges have a movable handle while others have two non-movable handles.

♦

Loading print ribbon in the cartridge

After removing the print ribbon cartridge, remove the used ribbon and put new ribbon in the cartridge.

Load print ribbon in the cartridge

1 Place the print ribbon cartridge on a level surface, such as a table, with the handle down and the glide rollers toward you. (See Figure 4-3.)

If the cartridge has a movable handle, fold the handle down so the cartridge is stable.

2 Pull up to remove the used supply spool and full take-up spool from the cartridge. Dispose of used ribbon according to your policy.

The print ribbon has a negative image of the information printed on the card. Dispose of ribbon according to your policy for protecting the data that might be visible on it.

3 Unwrap the new print ribbon.

4 Place the full supply roll on the right spool holder (step 1 in Figure 4-3).

Place the empty take-up spool on the left spool holder (step 3 in Figure 4-3), with the ribbon in front of the glide rollers (step 2 in Figure 4-3).

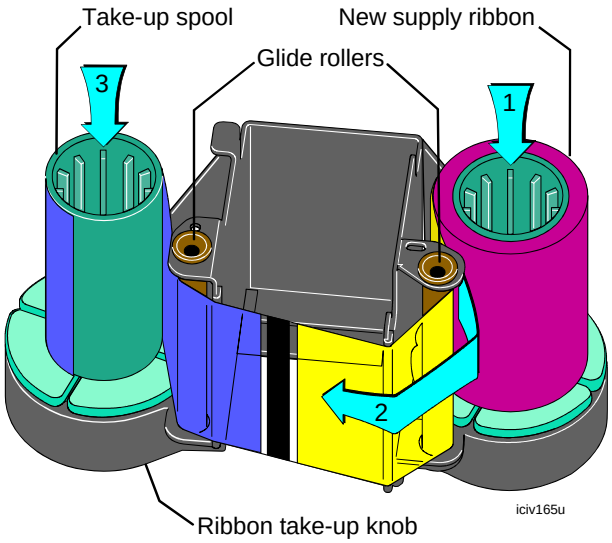


Figure 4-3: Load print ribbon in the cartridge

5 Press on the spools and turn them slightly (if needed) until the spools click into place. Make sure the ribs inside the spool align with the grooves in the spool holder.

6 Pick up the cartridge and turn the ribbon take-up knob (with the empty spool) to remove slack from the print ribbon.

The print ribbon cartridge is ready to be replaced in the printer.

♦

Replacing the print ribbon cartridge

When replacing the print ribbon cartridge, begin with the top cover open.

Replace the print ribbon cartridge

1 Hold the loaded print ribbon cartridge by the handle over the print station.

2 Align the print ribbon cartridge so the ribbon spools are over the print ribbon spindles (step 1 in Figure 4-4).

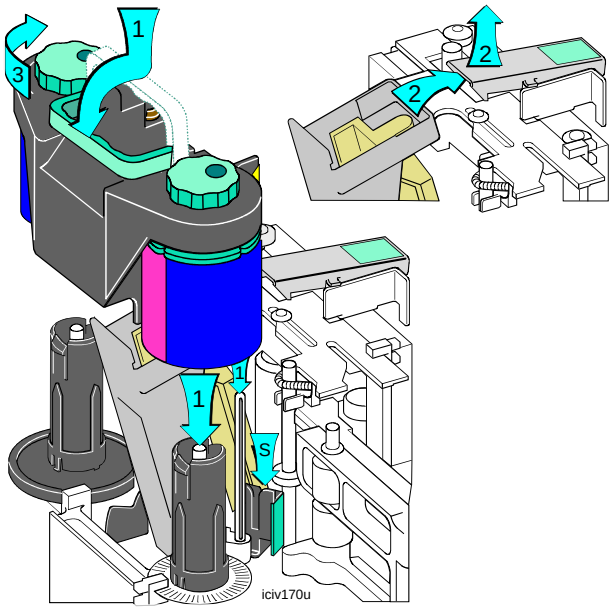


Figure 4-4: Replace the print ribbon cartridge in the printer

3 Lower the print ribbon cartridge into the printer (step 1 in Figure 4-4). Make sure the ribbon passes between the printhead cage and the print platen roller.

Make sure the print ribbon passes through the color sensor (marked “S” in Figure 4-4).

4 Press down firmly to seat the print ribbon cartridge in the printer. Lower the cartridge handle if needed.

5 Lift the printhead latch and press the printhead cage forward until it is upright (step 2 in Figure 4-4). Make sure the printhead latch clicks into place. Push down on the printhead latch if needed.

6 If there is slack in the print ribbon, turn the ribbon take-up knob clockwise to take up slack (step 3 in Figure 4-4).

7 Close the cover of the printer, and press to latch it in place. If the printer has a lock, lock the printer.

♦

Changing the cleaning tape

This section describes the three steps of changing the cleaning tape:

- Remove the cleaning tape cartridge
- Load the cleaning tape in the cartridge
- Replace the cleaning tape cartridge

Removing the cleaning tape cartridge

Remove the cleaning tape cartridge when a "Cleaning tape empty" message appears or when setting up the printer.

Remove the cleaning tape cartridge

1 Push down on the corner of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

⚠ When the top cover opens, the interlock switch removes power from all motors and fans. If overlay or topcoat stations are installed, power is removed from the heaters. Overlay or topcoat stations remain HOT.

2 Pull up on the lock button to release the cleaning tape cartridge (step 1 in Figure 4-5).

ⓘ On some cartridges, turn the lock counterclockwise ↺ to release the cleaning tape cartridge.

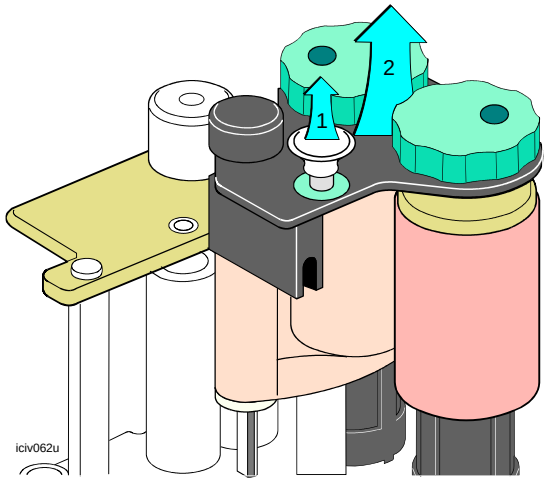


Figure 4-5: Remove the cleaning tape cartridge

3 Pull firmly and lift the cleaning tape cartridge straight up until the cartridge is above the edge of the printer (step 2 in Figure 4-5). Remove the cartridge from the printer.

♦

Loading cleaning tape in the cartridge

Remove the used cleaning tape and load new tape after removing the cleaning tape cartridge from the printer.

Load cleaning tape in the cartridge

1 Place the cleaning tape cartridge upside down on a level surface, such as a table, with the glide roller toward you.

2 Pull up firmly on the full take-up roll to remove it.

> Do not re-use cleaning tape. The cleaning mechanism does not operate properly if you attempt to re-use cleaning tape.

3 Remove the end of the cleaning tape from the empty supply spool. Dispose of used cleaning tape according to your policy.

4 Remove the empty supply spool.

5 Unwrap the new cleaning tape.

6 Remove the label from the new cleaning tape roll and discard it. Unroll a few inches of tape.

7 Press the end of the new cleaning tape onto the empty take-up spool (step 1 in Figure 4-6). Make sure the edges of the tape align with edges of the spool so the tape moves evenly.

8 Hold both rolls near the glide roller.

9 Place the full supply roll on the supply spool holder so the tape will unroll clockwise (step 2 in Figure 4-6). Make sure the ribs inside the spool align with the grooves of the spool holder.

10 Press on the spool and turn slightly (if needed) until the spool fully covers the spool holder ribs.

11 Move the take-up spool back so it aligns with the take-up spool holder (step 3 in Figure 4-6).

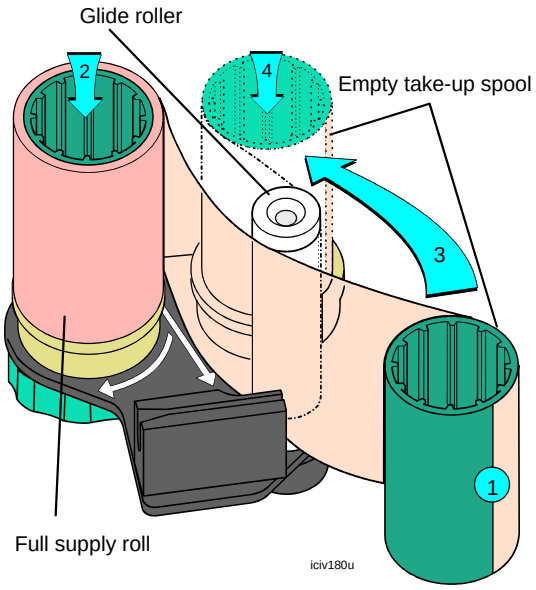


Figure 4-6: Load cleaning tape in the cartridge

12 Press down on the take-up spool and turn slightly (if needed) until the spool fully covers the spool holder ribs (step 4 in Figure 4-6).

Make sure the material winds clockwise ↻.

13 Pick up the cleaning tape cartridge and turn it over.

14 Turn the take-up knob to remove any slack in the cleaning tape. The cleaning tape cartridge is ready to be replaced in the printer.

♦

Replacing the cleaning tape cartridge

When replacing the cleaning tape cartridge, begin with the top cover open.

Replace the cleaning tape cartridge

1 Hold the loaded cleaning tape cartridge over the cleaning station.

2 Align the cleaning tape cartridge so the cleaning tape spools fit over the cleaning tape spindles and the glide roller is over its shaft (step 1 in Figure 4-7).

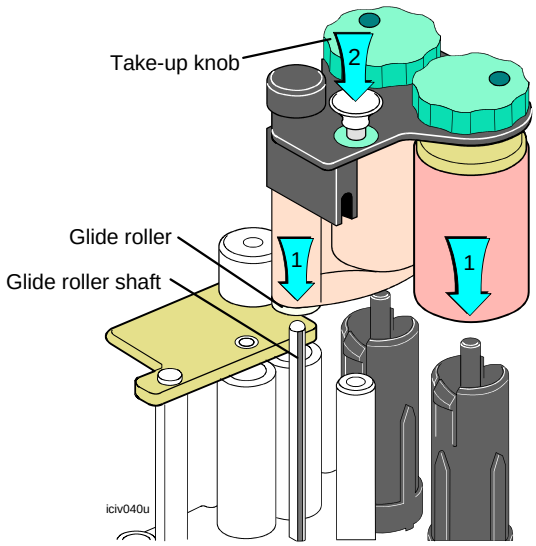


Figure 4-7: Replace the cleaning tape cartridge

3 Lower the cleaning tape cartridge into the printer.

4 Press down firmly to seat the cleaning tape cartridge in the printer.

5 Press down on the lock (step 2 in Figure 4-7) to secure the cleaning tape cartridge in the printer.

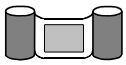
> On some cartridges, press down and turn the lock clockwise to lock the cleaning tape cartridge.

6 Turn the take-up knob counterclockwise to remove any slack from the tape.

7 Close the cover of the printer and press to latch it. If the printer has a lock, lock the printer.

♦

Changing the laminate in the overlay station



If your printer includes an optional overlay station, the station uses laminate supply material.

This section describes the three steps of changing the overlay material:

- Remove the supply cartridge
- Load material in the cartridge
- Replace the supply cartridge

> If you change the type of supply material you use, see “Changing operational settings” on page 6-15 for more information.

Removing the supply cartridge

Remove the supply cartridge when a "Supply empty" message appears, or when setting up the printer.

Remove the overlay cartridge

1 Push down on the corner of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

⚠ When the top cover opens, the interlock switch removes power to all motors and fans. Power is removed from the heater in the overlay (and topcoat) stations. Overlay (and topcoat) stations remain HOT.

2 Move the supply tracker away from the supply roll until it stops (step 1 in Figure 4-8).

ⓘ If the supply tracker does not have a handle, it will move out of the way automatically.

3 Pull up on the cartridge lock to release the overlay cartridge (step 2 in Figure 4-8).

ⓘ On some cartridges, push and release the cartridge lock to release the overlay cartridge.

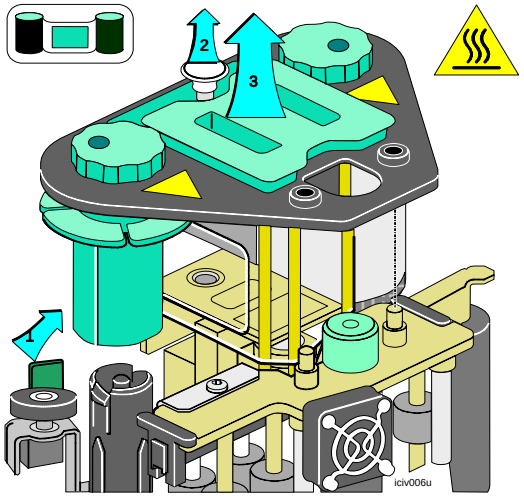


Figure 4-8: Remove the overlay cartridge

4 Lift the overlay cartridge straight up until the cartridge is above the edge of the printer (step 3 in Figure 4-8). Remove the cartridge from the printer.

♦

Loading supply in the cartridge

After removing the supply cartridge from the printer, remove the used material and load new material.

Load supply in the cartridge

1 Place the supply cartridge upside down on a level surface, such as a table, with the wide side away from you.

2 Remove the spool caps (if used).

3 Pull up firmly on the full take-up spool to remove it.

4 Remove the end of the supply material from the empty supply spool if needed. Dispose of the used supply according to your policy.

> On a regular basis, such as weekly, use the cleaning pen to clean deposits from the guides of the supply cartridge and clean the supply tracker.

5 Remove the empty spool from the holder and press it into place on the take-up holder (step 1 in Figure 4-9). Make sure the ribs inside the spool align with the grooves in the holder.

6 Press on the spool and turn it slightly (if needed) until the spool fully covers the ribs of the holder.

7 Unwrap the new supply material.

8 Place the full supply roll on the right holder as you face the open side of the cartridge (step 2 in Figure 4-9). Make sure the supply will unroll counterclockwise ↺, as shown.

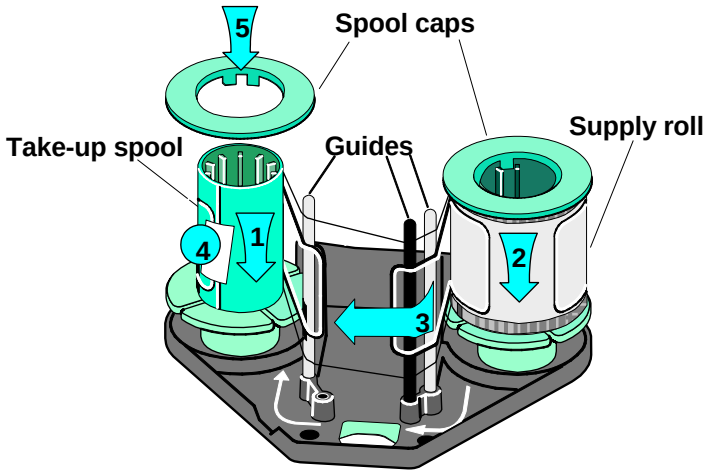


Figure 4-9: Load supply in the cartridge

9 Make sure the ribs inside the spool align with the grooves in the holder. Press on the spool and turn it slightly (if needed) until the spool fully covers the ribs.

10 Lift the label on the supply roll and unroll about 8 inches from the supply roll.

11 Wind the supply material in front of the guides and around the take-up spool (step 3 in Figure 4-9). Make sure that the material will wind counterclockwise .

12 Press the label onto the take-up spool to secure the supply material (step 4 in Figure 4-9).

13 If your cartridge includes spool caps, press the spool caps back into position on the ends of the take-up spool and supply roll (step 5 in Figure 4-9).

If you use an adjustable overlay cartridge, do not use spool caps. They interfere with the operation of the adjustable overlay cartridge.

14 Pick up the supply cartridge and turn it over. Turn the take-up knob clockwise to remove any slack in the supply material.

The supply cartridge is ready to be replaced in the printer.

Replacing the supply cartridge

When replacing the supply cartridge, begin with the top cover open.

Replace the overlay cartridge

Make sure the supply tracker is out of the way when you replace the overlay cartridge.

When the top cover opens, the interlock switch removes power to all motors and fans. Power is removed from the heater in the overlay (and topcoat) stations. Overlay (and topcoat) stations remain HOT.

1 Hold the loaded overlay cartridge over the overlay station.

If you have more than one optional station, make sure you match the cartridge with the station.

2 Align the overlay cartridge so the spools in the cartridge are over the spindles in the station.

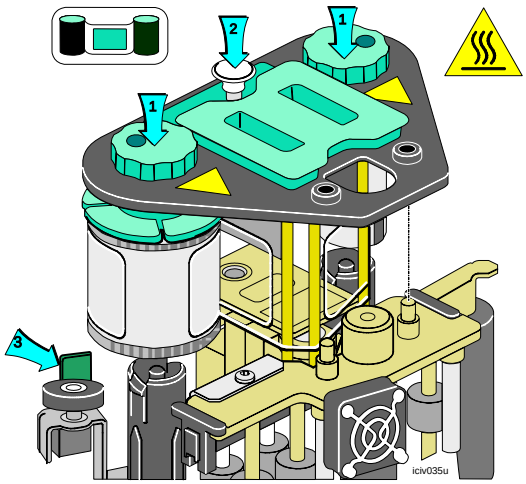


Figure 4-10: Replace the overlay cartridge

3 Lower the overlay cartridge into the printer (step 1 in Figure 4-10). Make sure the supply material passes between the heated roller and the platen roller. Turn the supply knobs if needed to take up slack so the material does not wrinkle as the cartridge is pushed in place.

4 Press down to seat the overlay cartridge in the printer.

If the cartridge becomes stuck part of the way into the station, turn the supply and take-up knobs clockwise slightly so the spindle ribs fit between the spool ribs.

5 Press the cartridge lock to secure the overlay cartridge in the printer (step 2 in Figure 4-10).

6 Move the supply tracker toward the full supply roll until it rests on the supply roll (step 3 in Figure 4-10).

If the supply tracker does not have a handle, it will move into position automatically.

If you use an adjustable overlay cartridge, follow the steps provided with the cartridge to produce a laminate patch placement that meets specifications.

7 Close the cover of the printer and press down to latch it. If the printer has a lock, lock the printer.

♦

Changing the topcoat in the topcoat station

This section describes the three steps of changing the topcoat material:

- Remove the topcoat cartridge
- Load topcoat in the cartridge

- Replace the topcoat cartridge

If you change the type of supply material you use, see “Changing operational settings” on page 6-15 for the complete process to follow.

Removing the topcoat cartridge

Remove the topcoat cartridge when a "Topcoat empty" message appears or when setting up the printer.

Remove the topcoat cartridge

1 Push down on the corner of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

⚠ When the top cover opens, the interlock switch removes power to the motors and fans. Power is removed from the heater in the topcoat (and overlay) station. The topcoat (and overlay) station remains HOT.

2 Move the supply tracker away from the supply roll until it stops (step 1 in Figure 4-11).

If the supply tracker does not have a handle, it will move out of the way automatically.

3 Pull up on the cartridge lock to release the topcoat cartridge (step 2 in Figure 4-11).

On some cartridges, push and release the cartridge lock to release the topcoat cartridge.

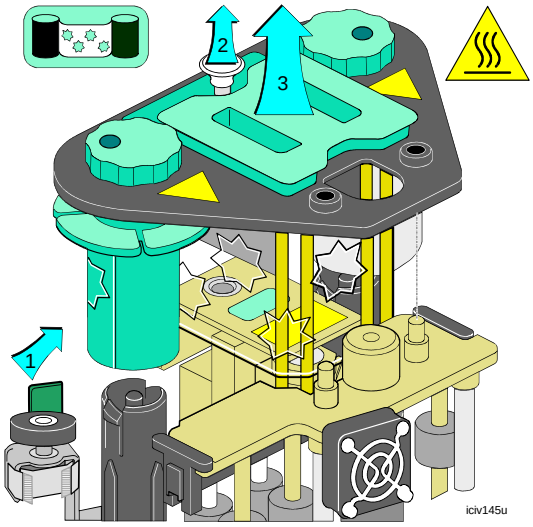


Figure 4-11: Remove the topcoat cartridge

4 Lift the cartridge straight up until the cartridge is above the edge of the printer (step 3 in Figure 4-11). Remove the cartridge from the printer.

♦

Loading topcoat in the cartridge

After removing the topcoat cartridge from the printer, remove the used topcoat material and load new topcoat material. You also can load additional cartridges to provide nearly uninterrupted operation.

Load topcoat in the cartridge

1 Place the topcoat cartridge upside down on a level surface, such as a table, with the wide side away from you.

2 Pull up firmly on the full take-up spool to remove it.

3 Remove the end of the supply material from the empty supply spool if needed. Dispose of the used supply according to your policy. Clean any particles of topcoat from the cartridge.

If you use holographic topcoat, consider whether the used supply should be treated as confidential material. The used supply might have holograms remaining on it.

4 Remove the empty spool from the supply spool holder and press the empty spool into place on the take-up spool holder of the cartridge (step 1 in Figure 4-12). Make sure the ribs inside the spool align with the grooves in the spool holder.

5 Press on the spool and turn the spool slightly (if needed) until the spool fully covers the spool holder ribs.

6 Unwrap the new topcoat supply material.

7 Place the full supply roll on the right holder as you face the open side of the cartridge (step 2 in Figure 4-12). Make sure the supply will unroll counterclockwise , as shown.

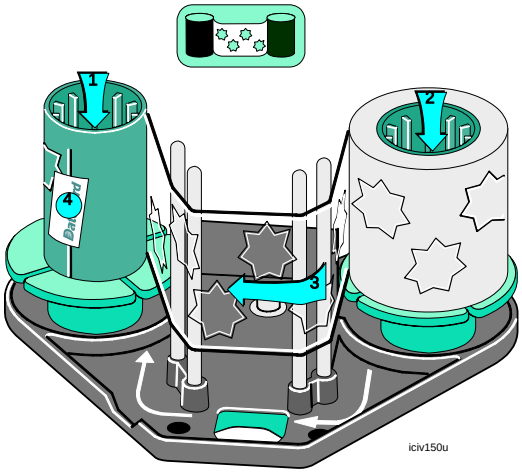


Figure 4-12: Load topcoat in the cartridge

8 Make sure the ribs inside the spool align with the grooves in the spool holder. Press on the spool and turn the supply roll slightly (if needed) until the spool fully covers the spool holder ribs.

9 Lift the label on the supply roll and unroll about 8 inches from the supply roll.

10 Wind the supply material in front of the guides and around the take-up spool (step 3 in Figure 4-12). Make sure that the material will wind counterclockwise ↺.

11 Use the label to secure the supply material on the take-up spool. Press the label onto the spool to secure the supply material (step 4 in Figure 4-12).

12 Pick up the topcoat cartridge and turn it over. Turn the topcoat take-up knob clockwise ↻ to remove any slack in the supply material.

The topcoat cartridge is ready to be replaced in the printer.

♦

Replacing the topcoat cartridge

When replacing the topcoat cartridge, begin with the top cover open and a loaded topcoat cartridge. Make sure the topcoat cartridge has been removed from the printer.

Replace the topcoat cartridge

ⓘ Make sure the supply tracker is out of the way when you replace the topcoat cartridge.

⚠ When the top cover opens, the interlock switch removes power to the motors and fans. Power is removed from the heater in the topcoat (and overlay) station. The topcoat (and overlay) station remains HOT.

1 Hold the topcoat cartridge over the topcoat station.

If you have more than one optional station, make sure you match the cartridge with the station.

2 Align the topcoat cartridge so the spools in the cartridge are over the spindles in the station.

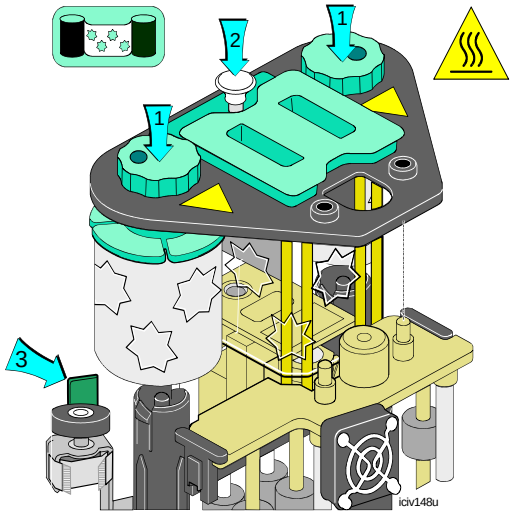


Figure 4-13: Replace the topcoat cartridge

3 Lower the topcoat cartridge into the printer (step 1 in Figure 4-13).

4 Press down firmly to seat the topcoat cartridge in the printer.

If the cartridge becomes stuck part of the way into the station, turn the supply and take-up knobs clockwise slightly so the spindle ribs fit between the spool ribs.

5 Press the lock to secure the topcoat cartridge in the printer (step 2 in Figure 4-13).

6 Move the supply tracker toward the full supply roll until it rests on the supply roll (step 3 in Figure 4-13).

7 Close the cover of the printer and press to latch it. If the printer has a lock, lock the printer.

♦

Using the printer

5

This chapter provides information to help you run the ImageCard IV printer effectively and efficiently. It describes:

- How to use the buttons and panel lights on the printer
- How to power on the printer
- How to make cards
- How you can use an application to print cards
- How to maintain production and produce high-quality cards, including managing printer speed and recovering from opening the cover
- How to remove completed cards and rejected cards
- How to respond to messages
- How to shut down the system

Buttons and lights

Two ImageCard IV printer buttons control the printer directly. Printer panel lights provide information about the printer's current state.

Buttons

Use the Power button and Ready button to control the printer directly. (The printer driver also includes controls that affect the printer.

Power button

The Power button controls the power to the printer and all stations in it. See "Powering on the printer and PC" on page 5-4 and "Shutting down the printer and PC" on page 5-16 for more information.

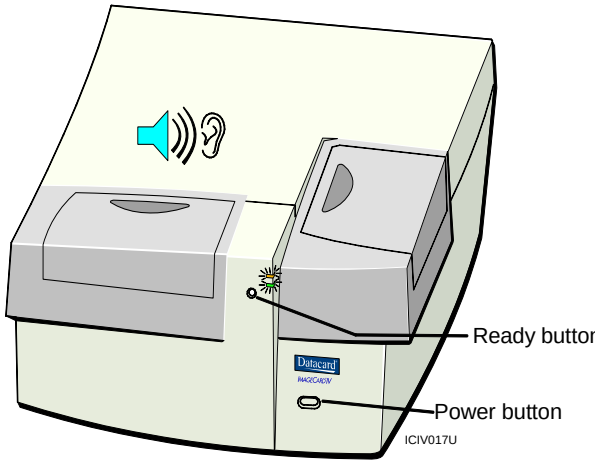


Figure 5-1: Ready and Power buttons

Ready button

The Ready button operates the pause function and clears partially-processed cards.

Pause or resume the printer

1 Press the Ready button briefly to pause the printer.

The cards in the printer stop processing at the end of the current process. Depending on the options installed in the printer and the location of cards when the printer is paused, the following can occur:

– The current process (such as printing color panels, printing a black panel, encoding a magnetic stripe, or applying a topcoat or overlay) will complete.

– A card inside a station stays in the station.

– A card in the turret is moved to the next station or the output tray.

2 When the printer has been paused, press the Ready button to resume operation.

3 If there are no problems in the printer, the printer finishes cards in the printer and moves them to the output tray.

♦

Clear cards from the printer

1 To clear the cards currently in the printer, press and hold the Ready button until a tone sounds.

If there is no error, the printer moves partly processed cards to the reject bin and removes card data from the printer memory.

If a message box is displayed on the PC, fix the situation described by the message first. See “Responding to messages” on page 5-14.

2 The printer returns to the previous state, such as busy printing cards, or paused due to an error.

♦

Panel lights

The front panel has two lights that provide information about the printer’s current state. The upper light is the power light and the lower light is the status light.

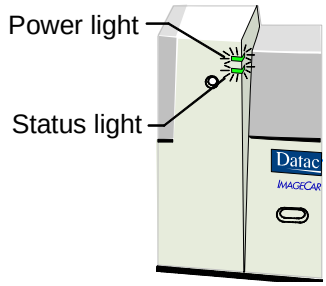


Figure 5-2: Panel lights

Power light	Description
Blinking green	The printer is starting.
Steady green	The printer power is on.
Blinking green	The optional heated roller in the topcoat or overlay station is warming up.

Status Light	Description
 Red Amber Green	The printer is starting.
 Steady green	The printer is ready and waiting for cards.
 Blinking green	The printer is busy printing cards.
 Steady amber	The printer is paused without an error.
 Blinking amber	The printer has issued a message. See the PC for the message.
 Steady red	The printer has a problem that requires service.
 Off	The printer top cover is open, such as when replacing supplies or fixing a problem. If cards were processing when the cover was opened, see “Interrupted printing” on page 5-11 to correct the situation.

Powering on the printer and PC

Use the following procedure to power on the printer and attached PC. You might change this procedure based on your policy.

Power on the printer and PC

If the printer is connected over a network using a print server, make sure the driver is installed and configured on the PC before using it.

1 Load cards in the input tray. Make sure all supplies are loaded. See “Loading supplies” on page 4-1 for more information.

2 Remove any printed or rejected cards from the output tray. See “Removing cards” on page 5-15.

3 Make sure the power cord and interface cable are connected. If needed, see “Connecting the printer” on page 3-2 for more information.

4 Press the printer Power button to turn on power (1). Observe the printer panel lights (2). See “Panel lights” on page 5-3. The printer initializes all enabled stations and makes audible sounds.

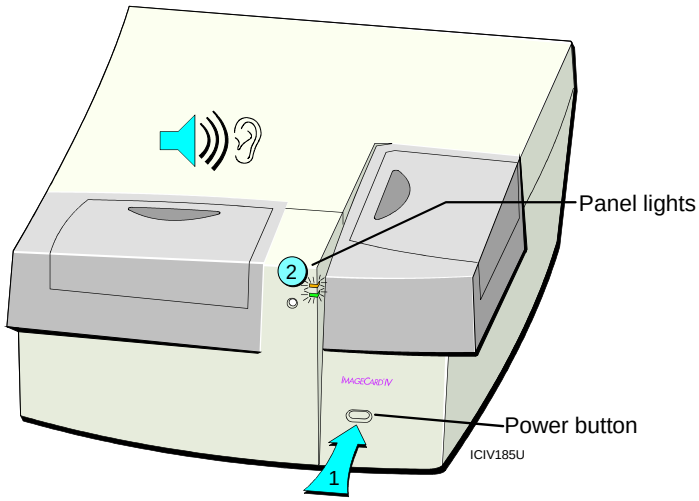


Figure 5-3: Power on the printer

5 Press the PC Power switch to turn on the power to the PC. Turn on power to any other equipment needed.

The PC can be powered on before the printer; however, you should wait a few minutes for the PC to obtain information from the printer. The PC power can also remain on if the printer is powered off.

♦

Making cards

This section describes several ways to make cards using the ImageCard IV printer.

- The ImageCard IV printer is designed to produce cards continuously. Usually, cards are sent from a card creation application such as Datacard’s ID Works™ which captures, organizes, and formats the information on the card. A card creation application is special software that handles the types of information used on cards. See “Use a card creation application” for the steps to follow.
- You also can make an exception card, which is usually printed on a different type of card stock and printed outside the normal sequence of processing. For example, if you use the ImageCard IV printer to issue identification cards, most cards might be for employees. Security personnel or visitors might have identification cards printed on different card stock. See “Make an exception card” on page 5-6 for the steps to follow.
- If you do not have a card creation application, you can use another PC application to format the information to print on cards. If you are encoding magnetic stripe

data, be sure to use an application in which you can save the result and edit it again, such as Windows WordPad™ or Word. See “Print from a PC application” for the steps to follow.

With any application, test your card design to verify the results.

This section also describes some situations that might occur when making cards.

Use a card creation application

1 Follow the instructions for the card creation application to capture, format, and save the data for the card.

2 In the card creation application, send cards to the printer (usually, use the Print button).

The printer driver receives data for each card, prepares the card for printing, and sends each card to the printer in the order received. The printer driver keeps cards in a queue if the printer is busy. For a directly networked printer, the print server manages jobs from any PCs that send jobs to the printer.

Developers can write card creation applications using the SmartDriver™ Software Developer’s Kit. This kit can be found on the SmartDriver CD-ROM or downloaded from www.datacard.com.

♦

Make an exception card

1 Wait until the printer has printed all the cards currently queued.

2 Remove the card input tray cover (step 1 in Figure 5-4).

3 Hold the card input tray and move the card pusher back slightly (step 2 in Figure 5-4).

4 Insert the unprinted exception card next to the wall of the card input tray, near the card pick mechanism (step 3 in Figure 5-4). Make sure the card is oriented correctly, as shown in Figure 5-4.

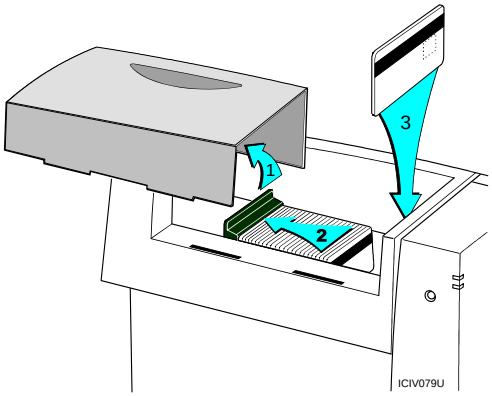


Figure 5-4: Load an exception card

5 Hold the card input tray and release the card pusher to hold all cards in place. Replace the card input tray cover.

6 In the card creation application, send the exception card to print.

7 The ImageCard IV printer picks the exception card and uses the data from the card creation application to process it.

8 When the exception card is complete, it is placed in the output tray along with all other printed cards. You can resume normal processing.

♦

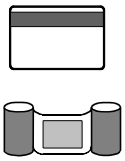
Print from a PC application

1 In the application, choose the SmartDriver as the current printer.

The default name for the ImageCard IV printer, when it is installed, is SmartDriver. Your printer might have a different name than SmartDriver.

2 Choose the printer settings that correspond to the cards to print. See “Working with Properties and other driver dialog boxes” on page 5-4 for more information. Settings might include the following:

- Enable two-sided printing if you plan to print the front and back of the card.
- Set the margins for the area to print on the card. A setting of Edge-to-Edge is the same as a margin of 0.
- Set the orientation for the card design—either portrait or landscape.
- Set the magnetic stripe format and coercivity if you plan to encode magnetic stripe data.



- Enable or disable topcoat or overlay, depending on the options in the printer and the features you want for this card.
- For a shared printer, choose the Ribbon Type to match the ribbon installed in the printer. (Do not use the autodetect setting.)

3 Using the application's page setup feature, set the following:

– Set the paper size to CR80 Card 2.13" x 3.38".
– Set all the margins to the same value as the driver. (You can set the margins in the application wider than the driver, if desired.)
– Set the orientation for the card design—either portrait or landscape.

4 Format the text to print using only a TrueType ( ) font. To print using the K (solid black) panel of the print ribbon, choose the Black color in the application. All other colors are printed using the color panels of the print ribbon (if you use a color print ribbon).

5 To print on the front of the card, keep data on one page. To print the front and back of the card, send a two-page document. (Make sure Print on Both Sides is set to Automatic.)

6 To encode magnetic stripe data, do one of the following:

– Also on the front of the card, enter the information to be encoded on the magnetic stripe 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 (use only on a PC running a Japanese language Windows operating system)
– If your application does not allow you to select fonts, use magnetic stripe escapes to identify data. See “Magnetic stripe encoding” on page D-1 for details.

You must select the SmartDriver as the printer in the application for magnetic stripe fonts to be visible. In addition, Windows must be set to display all fonts. (Some PC’s are set to display TrueType fonts only.) See Windows help for more information.

The text should use a small type size to keep characters on the same line. In many applications, you can type a smaller value, such as 4 points, for the type size. To view the characters in a small type size, zoom in on the text. Also, follow these guidelines:

  • Avoid formatting characters, such as tabs and returns, in the data for one magnetic stripe track. In some cases, these characters are converted to spaces, which might not be valid characters for the track.
  • Do not use typographic features, such as letter spacing, on magnetic stripe text.
  • The paragraph style must be Normal.
  • The magnetic stripe text, along with graphics and text to print on the front of the card, must be on the first page.

7 When the card data is captured and formatted correctly, select the application’s print function to send the card to print. The printer driver keeps cards in a queue if

the printer is busy. For a directly networked printer, the print server manages jobs from any PCs that send jobs to the printer.

♦

Operating tips

- For the most current information about messages, see the online help for each message.
- Whenever you are encoding magnetic stripe data or programming smart cards, be sure to handle incomplete cards according to your policy for handling the confidential data that might be on the card.
- Used print ribbon contains negative images of data printed on cards. Be sure to handle used print ribbon according to your policy for handling the confidential data that might be on the card.

While making cards…

The following situations might occur during normal card production.

- The cleaning mechanism might run right after the card reaches the print station. The cleaning mechanism operates automatically, based on the interval you select in the printer driver. It does not slow printer operation.
- Card processing pauses while the topcoat or overlay station heats to operating temperature. The topcoat or overlay stations include heated rollers that have specific temperature ranges in which they operate. At times, the heated roller might be warming up when a card is ready to have topcoat or overlay applied. That card will wait in the station.
- Card processing pauses while the printhead returns to operating temperature. At times, the printhead might be warming up when a card is ready to print colors, black, or topcoat. That card will wait in the station.
- Messages from the printer are displayed on the PC.

Card production rate

The following factors can affect card production rate:

- Quality of the card stock and printed cards
- Card features and shade count
- Not interrupting card printing

PC resources, such as processor speed and memory, can also affect the speed of processing for individual cards.

Card quality tips

Several factors can affect the quality of the cards printed by the ImageCard IV printer. Production rates lower when cards must be made again because of problems with quality.

To maintain the quality of printing or to correct problems you see with card quality, consider the following:

- Quality of the card stock

  Make sure that cards meet the card quality requirements as described in “Card specifications” on page B-7.

  The blank cards on which you print can have surface irregularities, such as an uneven surface. If you see dropped out areas, as shown on the card in Figure 5-5, the quality of the card stock might cause the problem.

Figure 5-5: Dropped out area on a card

  Blank cards can also have particles embedded in the plastic. If the printer includes the optional particle detector, and an excessive number of cards are rejected by the particle detector, change the particle detection sensitivity. See “Changing operational settings” on page 6-15 for more information. Also, consider obtaining better quality card stock.

  The quality of the magnetic stripe on the card can affect how many cards are successfully encoded with data. If magnetic stripe encoding errors appear regularly, consider obtaining better quality card stock.

- Cleanliness of the printer

  The printer supplies can leave particles inside the printer. The particles can attach to the printhead and create lines in printed cards, be trapped under topcoat or overlay, or interfere with magnetic stripe encoding. To minimize these particles, clean the printer regularly. See “Maintaining the printer” on page 7-1 for more information.

- Printer settings

  Selecting appropriate settings for printhead intensity, shade count, card registration, and material type can improve card quality and reduce operating problems. See “Changing operational settings” on page 6-15 for information about settings.

- Age of supplies

  Datacard supply products, such as print ribbon and topcoat or overlay supply, are dated. If supplies are older than the recommended shelf life, the quality of the cards might decline. See “Supply roll storage” on page B-6 for more information.

- Printing closer than 0.010 inch to a raised edge

  Raised surfaces (such as smart card chips, proximity card antennae, holograms, or signature panels) can interfere with printing. Keep printing 0.010 inch or more from raised edges.

Card features

Several card features can influence the card production rate. They include:

- Smart card programming

  Smart card programming is controlled by a custom application that sends data to the smart card module. The printer does not control the speed at which smart card programming occurs. The card waits in the smart card module until the custom smart card application indicates that programming is complete.

- Using both topcoat and overlay stations

  Applying topcoat using a topcoat station and then applying overlay increases the time required to process a card. Using both topcoat and overlay stations will decrease the production rate, compared to using either station alone.

- Topcoat applied using the print ribbon

  The longest print step involves applying topcoat using a print ribbon. To apply topcoat to selected areas of a card, you must use the print ribbon; however, this requires more time in the print station and reduces the overall production rate.

- Shade count

  The ImageCard IV printer can print up to 16 million colors on one card, plus true black (K). The printer driver creates these colors with just three color panels of print ribbon (YMC) by combining colors and varying the intensity of each color (shades). Printing the maximum number of colors provides a somewhat more realistic photo, but requires more time to print each card. The printer driver provides controls that you can use to control printer speed by controlling the number of colors printed. See “Changing operational settings” on page 6-15 for information on changing the shade count.

Interrupted printing

The ImageCard IV printer is designed to operate with the top cover closed. If the top cover is opened while a card is processing, processing stops and a card jam can occur. You must prepare the printer to resume printing of cards.

Encourage operators to keep the cover of the printer closed, even when they hear an unexpected sound so that the printer has time to handle any situations that occur.

The printer is designed to detect unusual situations and will indicate a problem using panel lights. In addition, a message box appears on the PC that describes the problem and provides help in fixing the problem. The printer automatically pauses.

Do not open the top cover unless the printer is paused or you are instructed to open it.

Recover from opening the top cover

⚠ When the top cover opens, the interlock switch removes power to the motors and fans. Power is removed from the heater in the topcoat and overlay station. The topcoat and overlay stations remain HOT.

1 Check the card location.

- If the card is in the print station, the card stops printing immediately. This can cause damage to the print ribbon.
- If the card is in the optional topcoat or overlay station, the topcoat or overlay is applied, and then the card stops at the entrance to the station.
- If the card is in the optional smart card module, the programming operation completes, and the card is not moved.
- If the card is at the optional magnetic stripe module, the encoding process completes.

ⓘ A message box is displayed on the PC screen when the printer cover is opened during printing.

2 If the print ribbon is damaged, do one of the following:

- Turn the take-up knob to move the damaged part of the ribbon past the printhead. Go to step 6.
- Remove the print ribbon cartridge. See “Removing the print ribbon cartridge” on page 4-2. Go to step 3.

3 Free the print ribbon from the card if needed.

4 If the print ribbon is torn, do the following:

a Trim the ends of the print ribbon if needed.

b Secure the ends of the print ribbon to the take-up spool using tape.

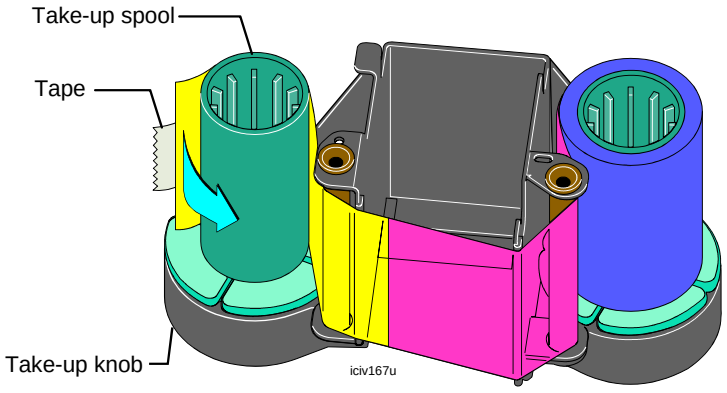


Figure 5-6: Secured trimmed end of print ribbon

c Turn the take-up knob on the print ribbon cartridge to cover the taped end of the print ribbon.

You can remove the card from the print station or allow the printer to clear the card.

5 Replace the print ribbon cartridge. See “Replacing the print ribbon cartridge” on page 4-4.

6 Close the cover of the printer and press to latch it. If the printer has a lock, lock the printer.

7 Select the Retry, Cancel, or Okay button on the message box displayed on the PC.

The card moves to the reject bin.

8 Return to the card creation program to send the card to print again.

♦

Removing cards

Remove completed cards from the output tray when an "Output tray full" message appears or to distribute printed cards. The output tray holds up to 250 cards with a nominal thickness of 0.030 inch (0.76 mm).

You can remove cards when the printer power is on or off, or while the printer is printing.

1 If the printer has a lock, unlock the printer. Lift the output tray cover and set aside (step 1 in Figure 5-7).

2 Hold the card output tray and pull back on the card pusher. Lock it in the notch on the bottom of the output tray (step 2 in Figure 5-7).

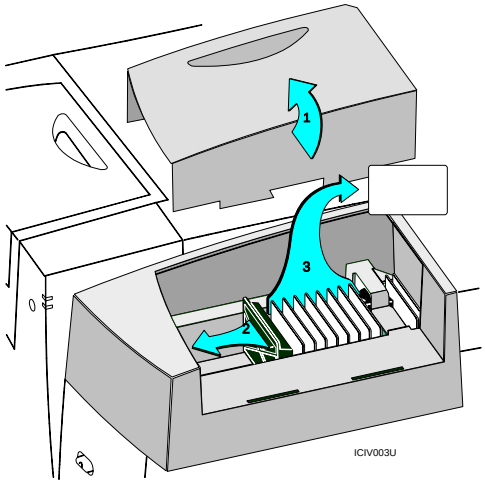


Figure 5-7: Remove completed cards

3 Lift cards from the output tray (step 3 in Figure 5-7).

Cards toward the front of the printer were printed before cards toward the rear of the printer.

4 Hold the card output tray and release the output tray card pusher.

5 Replace the output tray cover. If the printer has a lock, lock the printer.

♦

Remove rejected cards

Remove rejected cards from the reject bin when the "Reject bin full" message appears or when removing completed cards. Cards are rejected by the optional particle detector and when a problem occurs while personalizing a card.

1 If the printer has a lock, unlock the printer. Lift the output tray cover and set aside (step 1 in Figure 5-8).

2 Lift the cards from the reject bin (step 2 in Figure 5-8).

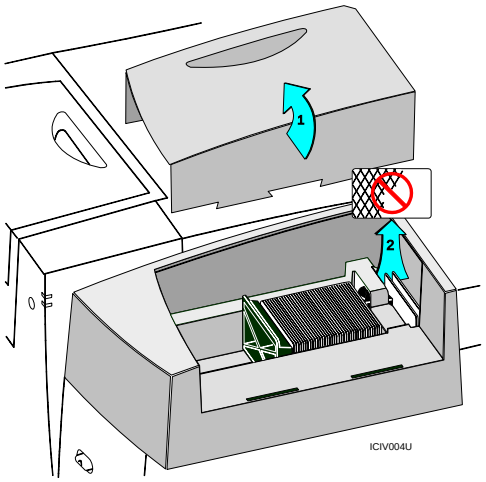


Figure 5-8: Remove rejected cards

3 Dispose of partly processed cards according to your policies for handling the confidential data that might be on the cards.

4 Replace the output tray cover. If the printer has a lock, lock the printer.

♦

Responding to messages

The printer provides information to the printer driver about the status of cards being processed. If the printer is not able to process and print a card, the printer driver generates a message on the PC in response to this situation. In most cases, the message is displayed on the PC. Some applications manage printer driver messages, and those messages might be different than described in this section.

In some circumstances, the printer might beep and the status light blink amber without a message appearing on the PC. The most likely causes are:

- Renaming the printer (Restart Windows to fix the problem)

- Printing a test card in a printer with a magnetic stripe module, when the card does not have a magnetic stripe (use a card with a magnetic stripe and make sure the stripe is oriented correctly)

Messages issued by the printer at startup and some communication messages can be displayed on more than one directly networked PC with a SmartDriver installed. In most cases, a message appears on the PC that sent the card job that has a problem.

Messages include a Help button, where information about recovering from the situation is available. Typical messages might indicate that the print ribbon needs to be replaced or that a card is stuck, a card is jammed in the turret, or that the output tray is full. See the "Fix a printer problem" procedure that follows.

When a message box appears, only use the buttons on the message box, so that both the printer driver and printer can return to normal operation.

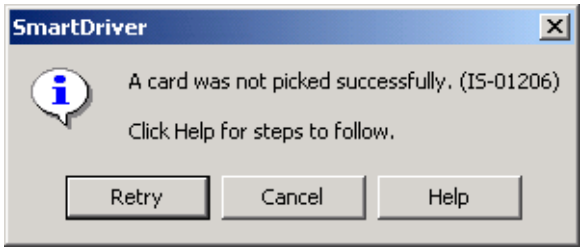


Figure 5-9: Typical message

If a message appears repeatedly and you cannot reliably correct the situation, service might be required.

Before you call your service representative, write down the following:

- The message and message number.
- The model of the printer, such as "ImageCard IV."
- The serial number of the printer. See "Troubleshooting" on page 8-1.
- The driver version and firmware version, described in "Using the Printer Toolbox" on page 6-10.

Fix a printer problem

1 When a message is displayed on the PC, follow the suggested action. Click the Help button to identify the likely cause of the problem and the possible solution.

2 When the printer status light blinks amber, it is safe to open the printer to fix any problems.

3 From the help topic, click the "Click for error recovery procedures" link to view a list of printers. Click the link for the printer you are using and follow the procedure provided in the *e*-Guide to fix the problem.

Most parts of the printer designed to be used by the operator are colored green. These parts include knobs for clearing jams and handles of supply cartridges.

4 After fixing the problem, close the cover of the printer and press to latch it.

5 Depending on the situation, the message box might be removed automatically or you might need to respond. Cards still in the printer might be ejected.

The message box can have one or more of these buttons:

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

– Cancel: Clears the card from the printer. The card is not sent to print again. If the problem is corrected, 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 cycle the printer if operation does not resume.)

6 If the message box disappears automatically, decide whether to return to the card creation application to send the card to print again.

♦

Shutting down the printer and PC

Shut down the printer and the PC to which it is attached when you are done making cards for the day or will be away from the system for an extended period of time.

Shut down the printer and PC

1 Make sure all cards have completed processing before turning off the power. (Choose Suspend in the Printer Toolbox to stop communication between the printer and driver.)

2 Press the Power button to turn off power to the printer.

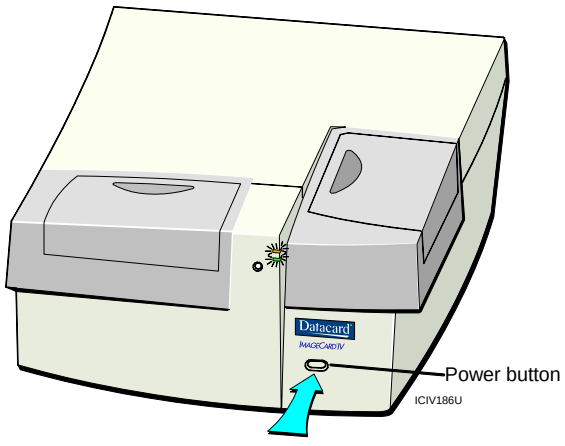


Figure 5-10: Press the power button to power off the printer

3 Follow your policy to secure unprinted card stock, supplies, and printed cards. For example:

– If the printer has the lock option installed, make sure the input and output trays and covers are latched securely in place. Lock the printer cover.

– Unlatch and remove the card input tray and output tray.
– Remove the print ribbon cartridge and optional supply cartridges. Carry cartridges to a secure location such as a safe, locking drawer, or locking closet.

4 Close PC applications and power off other equipment (including the PC) following your established procedure.

If you store the printer for several months, remove supplies before storing it. Supplies to remove include cards, print ribbon, cleaning tape, and topcoat or overlay supply.

♦

Using the printer driver

6

This chapter describes the tasks you perform using the printer driver. It describes:

- How to change printer settings
- How to use the Printer Toolbox
- Operational settings to change in the printer

Working with Properties and other driver dialog boxes

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. Printer driver settings and data 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 printer driver allows you to connect one of the following printer types to the same port:

- Select Class with Advanced Imaging Technology (including Platinum™ series)
- Magna Class with Advanced Imaging Technology (including Platinum™ series)
- SP35 card printer
- ImageCard IV

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

Tips for Properties, Printing Preferences, and Default Document Properties

When you use settings, consider the following for greatest success:

- When it is installed, the 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 print ribbon type, make sure that the printer and PC are connected so the value you select is sent to the printer and saved. (For printers used over a network, see the *e-Guide for ImageCard IV Printers*. For printers connected over a network using a print server, change settings from the Administrative PC first.)
- 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 Printer Type affects the settings that are available. See the *e-Guide for ImageCard IV Printers* for more information about the printer type.
- Select the Print on Both Sides setting before selecting the Print Ribbon Type and Print Blocking Pattern. The choices available for Print Ribbon Type and Print Blocking Pattern depend on the Print on Both Sides setting.
- 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.)
- If you change the card design, review all settings and make changes as needed to reflect the new card design.

- 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 for normal printer-driver communication. The printer or driver might stop operating if bi-directional communication is disabled.
- When the printer is directly networked to a PC, the Color Settings page can be used from all PCs. The Laminator Material page of the Printer Toolbox and Printhead and Laminator pages of Advanced Setup should be used only from the administrative PC.
- When the printer is networked to more than one PC, make sure to select the same ribbon type on all network-connected PCs.
- A user with Full Control permission on Windows NT, or a user with Allow permission for Print, Manage Printer, and Manage Documents (on Windows 2000 or XP) should use the Properties or Printing Preferences dialog boxes. A user with administrator rights also can use these dialog boxes. On the client PC when a printer is shared, a user with Print permission can use these dialog boxes.

For printers with optional topcoat and overlay stations, the material type must be selected only when you change the type of material you use. The ImageCard IV printer is factory-set for the material selected when the printer was ordered, and typically does not need to be changed. See “Changing operational settings” on page 6-15 for details.

If you change the type of printing you do and use a different type of print ribbon, you need to change printer settings. The settings to change depend on the current ribbon type and the new ribbon type. See the *e-Guide for ImageCard IV Printers* for more information about changing the ribbon type.

Properties for Windows Me & 98

The Properties dialog box includes the following settings or data:

- Print on both sides (duplex printing)
- Print ribbon type
- Card design settings, such as landscape or portrait orientation
- Print blocking pattern
- Whether to apply topcoat or overlay material to the front of the card, back of the card, or both
- Magnetic stripe encoding formats and coercivity
- Printer type
- Port to which the printer is attached
- Cleaning interval

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 taskbar.

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.

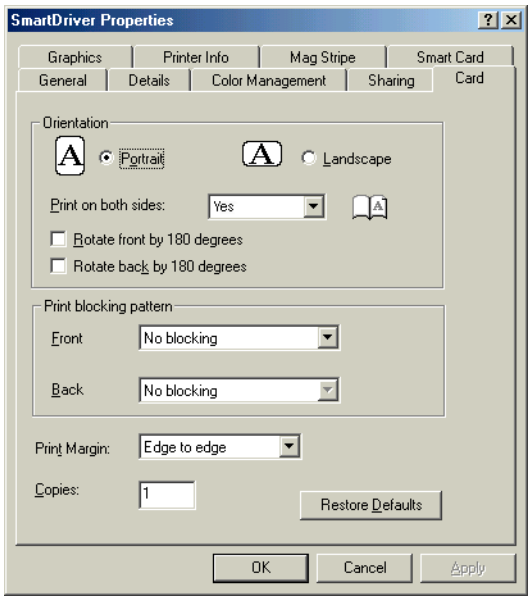


Figure 6-1: Properties dialog box, Windows Me and 98

5 Select the tab with the information to view or change.

To view help for settings, click on the What's This help button and then click a setting.

6 If you make changes, click Apply to save the settings. Click OK to close the dialog box.

♦

Properties & Printing Preferences for Windows 2000 & XP

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

- Print on both sides (duplex printing)
- Print ribbon type
- Card design settings, such as landscape or portrait orientation
- Printer type
- Print blocking pattern
- Cleaning interval
- Whether to apply topcoat or overlay material to the front of the card, back of the card, or both
- Magnetic stripe encoding formats, coercivity, and other settings

If you use a card creation application specifically designed to create cards, that application might send settings with cards that override driver settings.

The Printing Preferences dialog box also provides access to the About dialog box, which shows the printer driver version.

Settings that control the non-printing operation of the printer are in the Properties dialog box for the printer. These settings include:

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

The SmartDriver provides help for the Printing Preferences dialog box, and Windows 2000 or XP provides help for the Properties dialog box. Help provides information about specific settings of the printer driver. Help does not include step-by-step procedures or detailed conceptual information.

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 taskbar.

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.

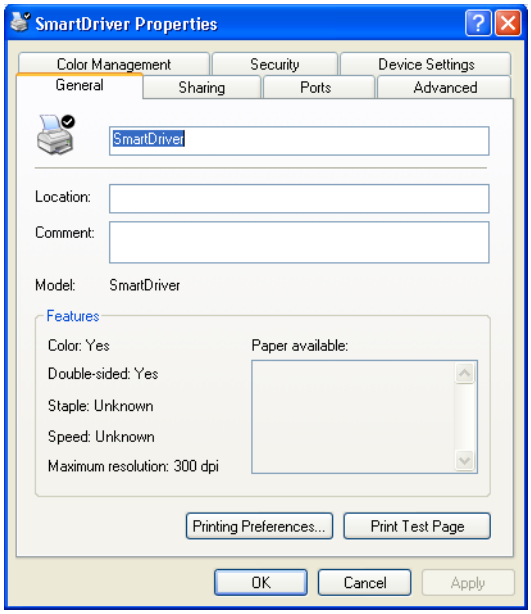


Figure 6-2: Properties dialog box, Windows 2000 and XP

5 Select the tab that contains the information you want to view or change.

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, reboot the PC and power the printer off and on.

♦

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 taskbar.

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 Printing Preferences dialog box appears.

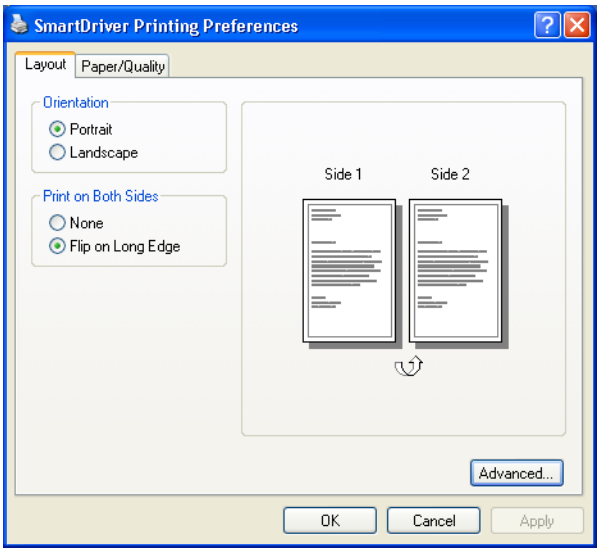


Figure 6-3: Printing Preferences dialog box, Windows 2000 and XP

5 If the setting you want to change appears, select the setting.

6 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 (+) if needed to see all selections. 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 you have the Printer Toolbox open, you can click the Printing Preferences button on the Status page to open the Printing Preferences Advanced dialog box.

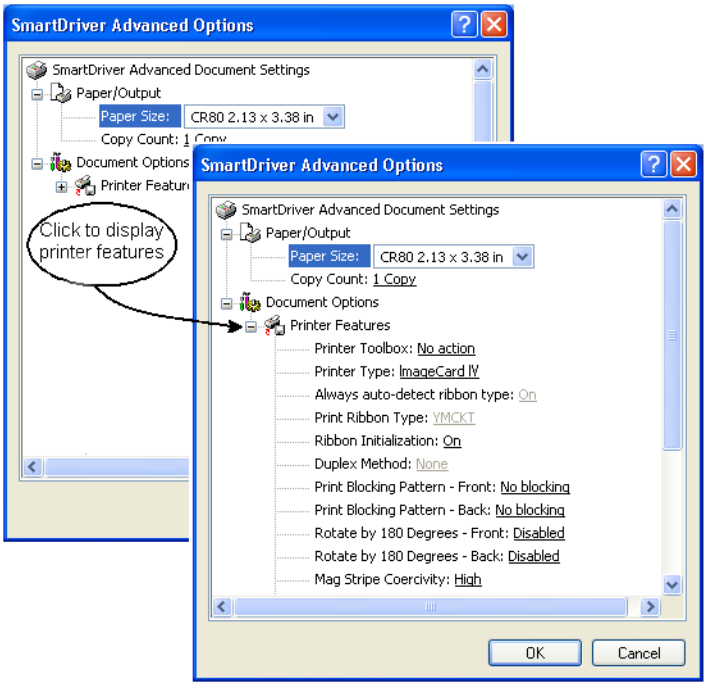


Figure 6-4: Advanced Options, Windows 2000 and XP

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 the Printer Toolbox. See “Using the Printer Toolbox” on page 6-10. For a network-connected printer, see the *e-Guide for ImageCard IV Printers*.

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.

7 If you make changes, click OK on each dialog box to save the settings and close the dialog box.

♦

Properties and Default Document Properties for Windows NT

Settings that control the printing and personalization of the card are in the Default Document Properties dialog box for the printer. These settings include:

- Print on both sides (duplex printing)
- Print ribbon type
- Card design settings, such as landscape or portrait orientation
- Print blocking pattern
- Printer type
- Whether to apply topcoat or overlay material to the front of the card, back of the card, or both
- Magnetic stripe encoding formats and coercivity

If you use a card creation application specifically designed to create cards, that application might include settings with cards that override driver settings.

Settings that control the non-printing operation of the printer are in the Properties dialog box for the printer. These settings include:

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

The SmartDriver provides help for the Default Document Properties dialog box, and Windows NT provides help for the Properties dialog box. Help provides information about specific settings of the printer driver. Help does not include step-by-step procedures or detailed conceptual information.

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 NT taskbar.

2 From the Windows NT 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.

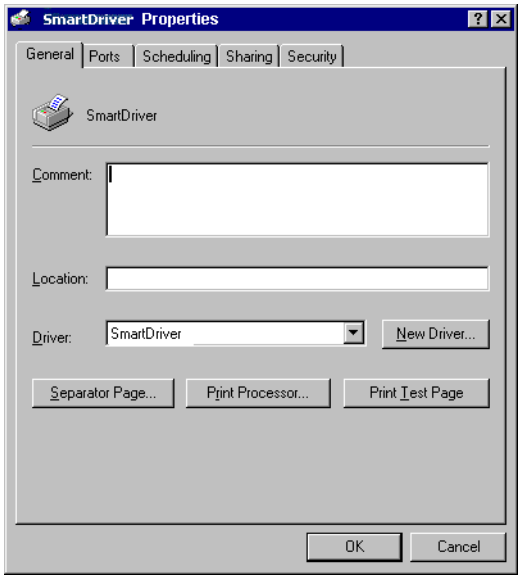


Figure 6-5: Properties dialog box, Windows NT

5 Select the tab that contains the information you want to view or change.

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, restart Windows and power cycle the printer.

♦

Use the Default Document Properties dialog box

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

1 Select Start from the Windows NT taskbar.

2 From the Windows NT 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 Document Defaults. The SmartDriver Default Document Properties dialog box appears.

If you have the Printer Toolbox open, you can click the Default Document Properties button on the Status page to open the Default Document Properties dialog box.

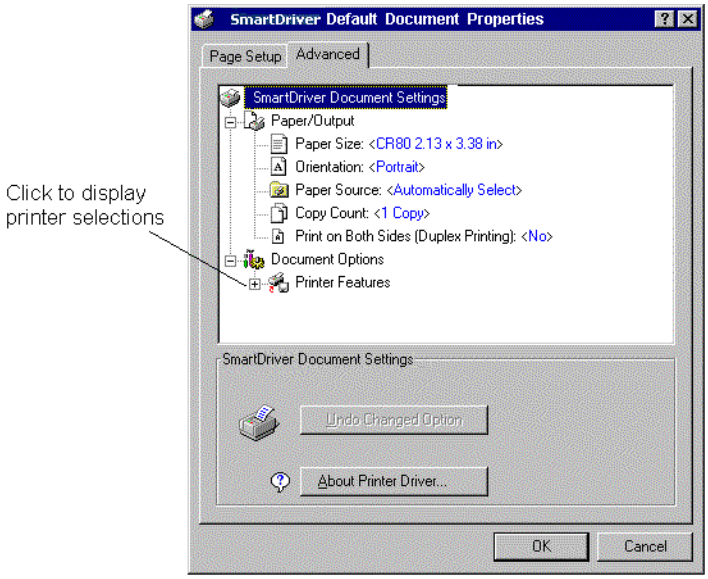


Figure 6-6: Default Document Properties dialog box, Windows NT

5 Select the tab that contains the information you want to view or change. On the Advanced tab, click the plus sign (+) if needed to see all selections available. When you click a selection, choices appear in the "Change**. . .** " box. Click the value you want.

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 resume communication using the Printer Toolbox. See "Opening and using the Printer Toolbox" on page 6-12.

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 to save the settings and close the dialog box.

♦

Using the Printer Toolbox

The Status page of the Printer Toolbox tracks communication between the ImageCard IV printer and its printer driver. The Printer Toolbox icon is located in the lower right corner of the Windows desktop (see Figure 6-7).

Figure 6-7: Printer Toolbox icon

The Printer Toolbox starts as part of Windows startup and is displayed by default. If you exited the Printer Toolbox, it starts again after a card is printed or after the Properties, Printing Preferences, or Default Document Properties dialog box is opened.

The Printer icon shows the state of communication between the printer and driver, listed in the table below.

Icon	Description	Indicates
	This printer icon is white with a green dot.	The driver and printer are communicating. The printer and PC are connected using a USB or parallel cable.
	This printer icon is gray.	Communication between the driver and printer is suspended. The driver is not reporting printer information such as errors. The printer and PC are connected using a USB or parallel cable.
	This printer icon is white with green card trays and a white exclamation point in a red circle.	The Printer Toolbox is active but is not communicating with the printer. The printer might be off, cables might be loose, or a problem might exist. The printer and PC are connected using a USB or parallel cable.
	This printer icon is white with a blue magnifying glass.	The Printer Toolbox is in advanced setup mode. Use advanced setup when changing printing intensity, the position of printing, or settings for laminator material.
	The printer icon is white, includes a PC, and has a green stripe on top.	The Printer Toolbox is running on a client PC using printer sharing over a network. The Printer Toolbox displays the client status and provides access to color settings.
	The printer icon is white with a green stripe and dot.	The driver and printer are communicating. The driver is installed on a PC that uses a direct network connection to the printer. The printer is not currently printing cards.
	The printer icon is white with a green stripe and yellow hourglass.	The driver is active but is not communicating with the printer. The driver is installed on a PC that uses a direct network connection to the printer.
	The printer icon is gray with a green stripe.	Communication between the driver and the network is temporarily suspended. The driver is installed on a PC that uses a direct network connection to the printer.

Use the Help button on the Printer Toolbox for more information about each window.

Opening and using the Printer Toolbox

You can use the Printer Toolbox to do the following:

- View information about the printer and driver
- Run a cleaning card cycle (see “Using the cleaning card” on page 7-2)
- Suspend communication between the printer and driver
- Minimize the Printer Toolbox dialog box
- Use color settings
- Start or quit advanced setup

Open the Printer Toolbox

The Printer Toolbox dialog box is open by default when you start Windows. You can display the Printer Toolbox dialog box (if it is minimized) by double-clicking the icon in the system tray that looks like your printer.

If the Printer icon is not visible, do one of the following:

- Open Properties (Windows 98 and Me), select the Printer Info tab, and click the "Open Toolbox" button.
- Open Printing Preferences (Windows 2000 and XP), click the Advanced button, and select "Printer Toolbox:Open".
- Open Document Default Properties (Windows NT), and select "Printer Toolbox:Open".

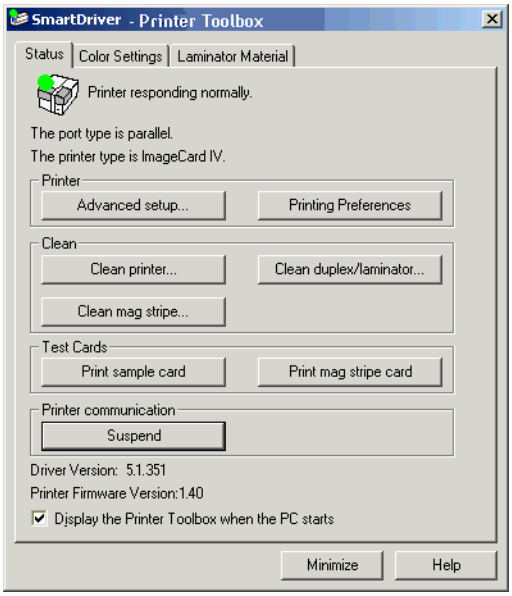


Figure 6-8: Printer Toolbox

Viewing Printer Toolbox information

The Printer Toolbox displays the following status information:

- The top line displays the current printer or driver status.
- If the printer is directly connected to this PC, the second line displays any messages. If the printer is shared through a network, this line indicates where to find information about messages. (This line is blank on a locally connected PC when there are no errors or when any message has been cleared and processing resumes.)
- The third line displays information about how the printer and PC are connected, which can be “parallel,” “USB,” “client PC,” or “directly networked.” If printer is connected using a parallel port that is not supported, the line also instructs you to change the port mode to ECP. See “Setting parallel port values” on page C-6.
- The fourth line displays the printer type.
- At the bottom of the dialog box, the Printer Toolbox displays the driver version and the printer firmware version.
- At the bottom of the dialog box, the “Display Printer Toolbox when the PC starts” checkbox allows you to determine whether the Printer Toolbox is displayed when Windows starts.

Suspending the Printer Toolbox

To suspend communication, do one of the following:

- Right-click on the printer icon in the lower right corner of the Windows desktop. From the pop-up menu, click Suspend.
- On the Printer Toolbox, click Suspend.

You cannot suspend communication while printing a card.

Suspend communication before power off to avoid interrupted communication. Communication automatically resumes when you print a card, or when you open Properties, Document Default Properties, or Printing Preferences.

Exiting the Printer Toolbox

Exiting the Printer Toolbox stops the Printer Toolbox program and closes the dialog box. The icon does not appear in the lower right corner of the Windows desktop.

To exit or stop communication, right-click on the printer icon in the lower right corner of the Windows desktop. From the pop-up menu, select Exit. You should exit the Printer Toolbox when you receive instructions to do so.

You cannot exit from the Printer Toolbox while printing a card.

The Printer Toolbox automatically restarts when you print a card, or when you open Properties, Document Default Properties, or Printing Preferences. If you need to restart the Printer Toolbox, open Properties, as described in “Opening and using the Printer Toolbox” on page 6-12.

Minimizing the Printer Toolbox

The Minimize button closes the Printer Toolbox dialog box. The program continues to run.

Starting or quitting Advanced Setup

The Advanced Setup button on the Printer Toolbox changes the printer driver from printing mode to Advanced Setup mode. After you start Advanced Setup, additional tabs appear on the Printer Toolbox where you can change printing intensity, position of printing, and laminator settings.

You cannot start Advanced Setup while printing a card. Wait until all cards are printed, and then click Advanced Setup.

For information about using the features available in Advanced Setup, see the *e-Guide for ImageCard IV Printers*.

While in Advanced Setup, the button on the Status page is named “Quit Advanced Setup.” Click the Quit Advanced Setup button to remove the additional tabs and return to printing mode.

For directly networked PCs, Datacard recommends that you use Advanced Setup only from an Administrative PC, and that you suspend communication at other PCs connected to the printer.

Color settings

The Color Settings tab is available from the Printer Toolbox at any time. For directly networked and shared PCs, color settings affect cards sent from the PC.

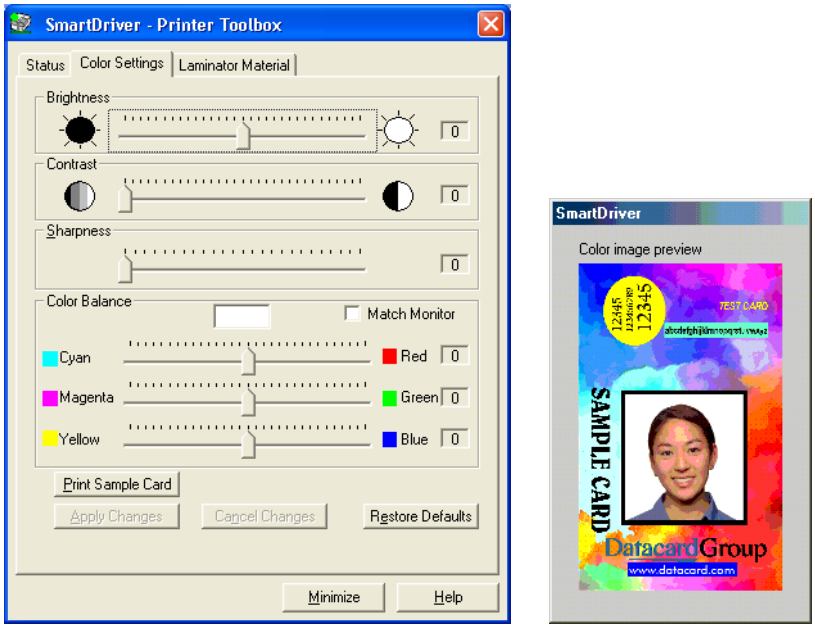


Figure 6-9: Color Settings page and preview

Changing operational settings

This section describes the operational settings for the printer that you can change using the printer driver. These settings can be used to customize the performance of your printer to meet the demands of your card design.

Detailed information about how to change settings is available in help for each tab.

Overview

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.

You can work with the following:

- **Printer values**

  Before changing many operational settings, record the current values in the printer using the Printer Values tab. This record will allow you to return to current settings if the changes you make do not address your concerns.

  You can view or save printer values only from the PC to which the printer is directly connected (locally or using a network).

- **Shade count**

  For each type of ribbon panel, you can change the shade count (the number of shades printed). When you change the shade count, the corresponding intensity changes. The printer requires more time to print a larger number of shades. Use the Printhead tab of Advanced Setup to change the shade count.

- **Preheat**

  You can change the print performance and appearance of cards you print by changing the preheat value. The preheat value determines the temperature of the printhead during the print process but when the printhead is not actually printing. A higher preheat value keeps the printhead closer to the temperature needed to print a color, so it more readily prints pale shades or thin lines. Too high a preheat value prints a color where the card image does not contain that color (such as an empty background). The preheat usually does not need to be changed from the recommended default values. The recommended default values are 96 for Black (K), 47 for YMC and Tonal, and 7 for Topcoat. Use the Printhead tab of Advanced Setup to change the preheat values.

- **Printing intensity**

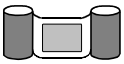
  You can fine-tune the appearance and function of cards you print by changing the intensity used to print types of ribbon panels. For full-color printing (YMC panels), intensity affects the lightness or darkness of printing. For black (K) panels, intensity affects the thickness of letters and barcodes–higher intensity prints thicker letter or barcodes. For topcoat (T) panels in the print ribbon, intensity affects the degree of topcoat coverage. Use the Printhead tab of Advanced Setup to change the printing intensity.

- **Position of printing on the card**

  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 position of printing on the card 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 Printhead tab of Advanced Setup to change the position of printing on the card.

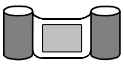
- **Particle detection sensitivity**

  If your printer has an optional particle detector, you can change the particle detection sensitivity if your card stock has a feature, such as a signature panel, that is detected as a particle. You can also return to a higher level of sensitivity if you have previously lowered it. As you lower the sensitivity, you increase the chance of not detecting potentially damaging particles. Use the Printhead tab of Advanced Setup to change the particle detection sensitivity.



- **Type of laminate and topcoat material**

  If you change the type of overlay or topcoat material you use, you should select the new material type using the Laminator–Material tab of the Printer Toolbox. The ImageCard IV printer is factory-set for the type of material you specified when ordering the printer. Use these factory settings unless you change the type of material. When you select a material type, default values for the material are sent to the printer and current values are erased.



- **Laminate and topcoat settings**

  You can change the temperature, pressure, and speed used to apply laminate or topcoat to cards. You can also change the position of the laminate on the card. The combination of your cardstock and the supply material might require values different from the defaults. Use the Laminator–Advanced tab of Advanced Setup to change laminate and topcoat settings.

Your service representative can guide you in making settings that will meet your specific needs.

Operational 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 representative for assistance.

Process for changing settings

Help contains several procedures which help you make specific changes to settings. All of the procedures use the following basic steps.

1 Assemble materials, including:

  – 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.

2 Save printer values.

3 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.)

4 Make a test card and record the current values for the setting to change. Also record the date and sequence number (beginning with 1).

“Test cards” for this process can be sample cards or printer test cards, or they can be printed from the card creation application. If you are changing color settings, print representative cards from the card creation application.

5 Change the setting and apply the change.

6 Make a test card. Record the new setting and sequence number.

7 Evaluate the result on the test card.

- If the result meets the goal, you have completed the process.
- If the result does not meet the goal, return to step 5. Repeat steps 5, 6, and 7 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 4.

♦

Maintaining the printer

7

This chapter describes how to maintain the ImageCard IV printer for optimal performance. It describes:

- How to use a cleaning card
- Routine maintenance and cleaning tasks and how often to perform them
- How to clean the printhead
- How to clean the optional magnetic stripe head
- How to clean the heated roller in the optional overlay station
- How to replace the printhead

Using the cleaning card

The rollers in the printer should be cleaned periodically with the ImageCard IV cleaning card to ensure card quality and continued smooth operation of the printer. The cleaning card is sticky and removes particles and other debris from inside the printer, especially from the rollers. See “Cleaning supplies” on page B-10 for information about cleaning cards.

The frequency of use depends on the supplies used and the environment in which the printer operates.

- Use a cleaning card weekly or at least after every 5000 cards if you do not have a topcoat station.
- Use a cleaning card daily or after every 1000 cards if:
  - The printer is used in a dusty or otherwise dirty environment
  - A topcoat station is installed and you regularly use clear or holographic topcoat on cards

Topcoat supply material can release small particles as the material is used. Particles accumulate around the lower card track and other horizontal surfaces. Particles also can stick to cards or rollers.

Holographic topcoat particles are easy to see, while clear topcoat particles are not as visible. Some supply lots will release more particles, called flash, than other lots. Adjust your cleaning practices to suit the current supply lot.

Tools to use:

- ImageCard IV cleaning card

Run a cleaning card

1 Make sure that the power for the PC and printer is on and the printer is ready to receive cards.

Unlock the printer if needed.

2 Push down on the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

When the top cover opens, the interlock switch removes power to all motors and fans. If overlay or topcoat stations are installed, power is removed from the heaters. Overlay or topcoat stations remain HOT.

3 Remove the print ribbon cartridge. See “Removing the print ribbon cartridge” on page 4-2 for more information.

Leave the printhead unlatched after removing the print ribbon cartridge.

4 If the printer includes topcoat or overlay stations, remove the supply cartridges. See “Removing the supply cartridge” on page 4-10 or “Removing the topcoat cartridge” on page 4-14 for more information.

5 Close the printer's top cover and push down to latch it.

6 Remove the card input tray cover. Hold the tray and latch the card pusher in the notch on the bottom of the card input tray. Move cards back to rest on the card pusher.

Do not touch the printing surface of the cards.

7 Peel off the protective paper from the cleaning card.

Figure 7-1: Remove the protective paper from the cleaning card

8 Place the cleaning card in the card input tray as shown in Figure 7-2. Insert the end of the card into the pick rollers.

Make sure the sticky side of the card is toward the card pusher and the lower edge of the cleaning card rests on the bottom of the tray.

If the card separator is set to pick cards that are thinner than 0.035 inch, change the card separator setting. See “Printing thicker or thinner cards” on page 3-8 for more information.

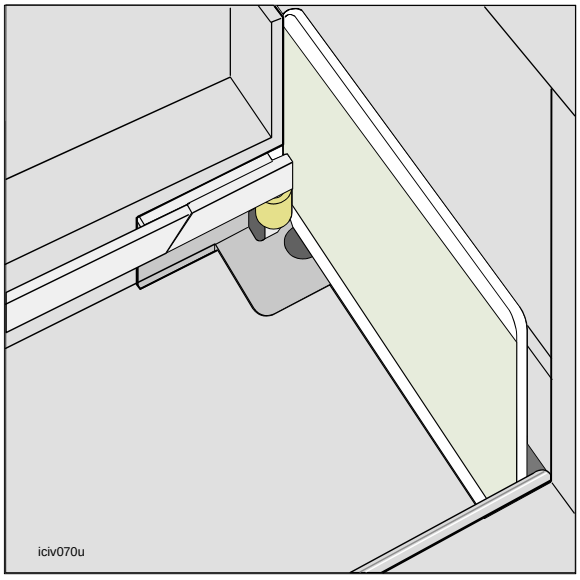


Figure 7-2: Place the cleaning card between the card input guide rollers

9 At the PC, open the Printer Toolbox if needed by double-clicking the icon in the lower right corner of the desktop.

10 Select the Clean Printer button on the Printer Toolbox. Click the OK button on the message box.

The printer picks the cleaning card and automatically moves it through the printer several times. The printer will eject the cleaning card when the cleaning cycle is complete.

11 Remove the used cleaning card from the reject bin. If you perform other cleaning tasks now, set the card aside to use for other tasks during this cleaning session. Discard at the end of the cleaning session.

Do not use the same cleaning card when you run a cleaning card in the printer again. The cleaning card is designed to be used for one cleaning session only.

12 Push down on the cover of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

When the top cover opens, the interlock switch removes power to all motors and fans. If overlay or topcoat stations are installed, power is removed from the heaters. Overlay or topcoat stations remain HOT.

13 Replace the print ribbon cartridge. See “Replacing the print ribbon cartridge” on page 4-4 for more information.

14 If the printer includes topcoat or overlay stations, replace the supply cartridges. See “Replacing the supply cartridge” on page 4-12 or “Replacing the topcoat cartridge” on page 4-16 for more information.

15 Close the cover of the printer and press to latch it in place.

Lock the printer if needed.

16 Move cards back so they can be picked and release the card pusher. Replace the card input tray cover.

If you changed the card separator setting, return the card separator to the setting for the cards you process. See “Printing thicker or thinner cards” on page 3-9 for more information.

17 Cycle power to the printer.

a Press the Power button to power off the printer.

b Press the Power button to power on the printer.

You are ready to resume normal printer operation.

♦

Routine maintenance and cleaning

This section describes how to maintain and clean the ImageCard IV printer. Perform routine cleaning tasks weekly or after every 5000 cards. Routine cleaning tasks include:

- Cleaning the outside of the printer
- Cleaning the inside of the printer

- Cleaning the card input and output trays and cavities
- Using the cleaning card

Cleaning the outside of the printer

The outside of the printer should be kept clean for best appearance and to prevent air intake and exhaust fans from moving debris inside the printer or becoming obstructed.

The frequency of cleaning depends on the environment in which the printer operates. If the printer is used in a clean environment, clean the outside of the printer at least once a month. If the printer is used in a dusty or otherwise dirty environment, clean the printer daily or weekly.

Tools to use:

- Vacuum cleaner with attachments
- Clean, lint-free cloth and mild detergent (As an alternative, isopropanol can be used with the lint-free cloth.)

Clean the outside of the printer

1 Make sure the power for the printer is off and the printer top cover is closed.

2 Remove the power cord from the power receptacle.

3 Use the vacuum cleaner to clean around the printer.

   – Clean behind the printer. If any dust is visible on the back panel of the printer or on the fan opening, vacuum it from the printer.

   – Clean around the base of the printer. Pay special attention to the left side of the printer, where air intake vents are located. These vents should be kept free of dust or obstructions.

4 Use a lint-free cloth and mild detergent to clean the outside of the printer.

5 Continue with other cleaning tasks.

♦

Cleaning the inside of the printer

The inside of the printer should be kept clean to ensure card quality and continued smooth operation of the printer.

The frequency of cleaning depends on the supplies used and the environment in which the printer operates. Typically, clean the printer weekly or after every 5,000 cards. Clean the printer more often if:

- The printer is used in a dusty or otherwise dirty environment
- A topcoat station is installed and you regularly use topcoat on cards

Topcoat supply material can release small particles as the material is used. Particles accumulate around the lower card track and other horizontal surfaces. Particles also can stick to cards or rollers.

Holographic topcoat particles are easy to see, while clear topcoat particles are not as visible. Some supply lots will release more particles, called flash, than other lots. Adjust your cleaning practices to suit the current supply lot.

Tools to use:

- Vacuum cleaner with attachments
- Clean, lint-free cloth
- ImageCard IV cleaning card

Clean the inside of the printer

1 Turn off the power to the printer. Remove the power cord from the receptacle.

Unlock the printer if needed.

2 Push down on the corner of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

3 Remove all supply cartridges. See “Loading supplies” on page 4-1 for more information.

⚠ When the top cover opens, the interlock switch removes power to all motors and fans. If overlay or topcoat stations are installed, power is removed from the heaters. Overlay or topcoat stations remain HOT.

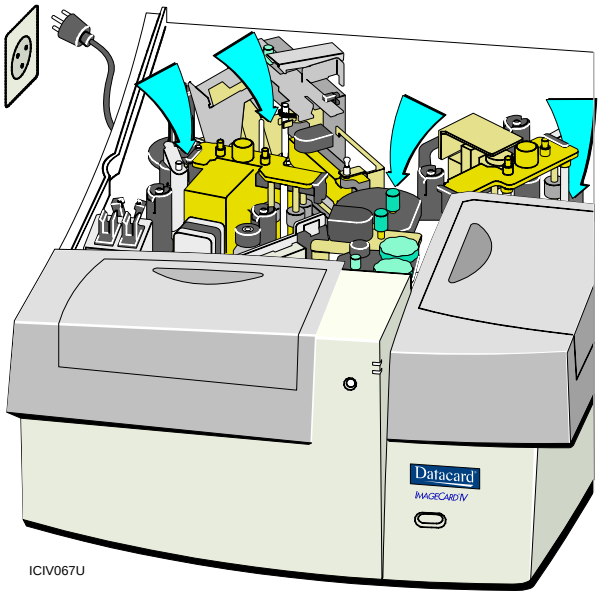


Figure 7-3: Clean the inside of the printer

4 Use a lint-free cloth to clean the visible surfaces inside the printer.

⚠ Do not clean the green printed circuit boards inside the printer.

5 Use the vacuum cleaner to remove any visible particles from inside the printer.

ℹ If a topcoat station is installed, be sure to clean the base of the topcoat station and its tracks.

⚠ Do not allow any wires or cables to enter the vacuum cleaner nozzle.

6 If a topcoat or overlay station is installed in the printer, use a cleaning card.

– If you just ran a cleaning card in the printer, you can use that card to complete this procedure.

– If you have not run a cleaning card, remove the protective paper from the ImageCard IV cleaning card.

Figure 7-4: Remove the protective paper from the cleaning card

7 Roll the sticky surface of the cleaning card against the full length of the debower roller to remove any particles. Rotate the debower roller to clean all sides.

ℹ Do not touch the roller surface with your fingers. Oils from the skin can cause the debower to slip or can affect card quality.

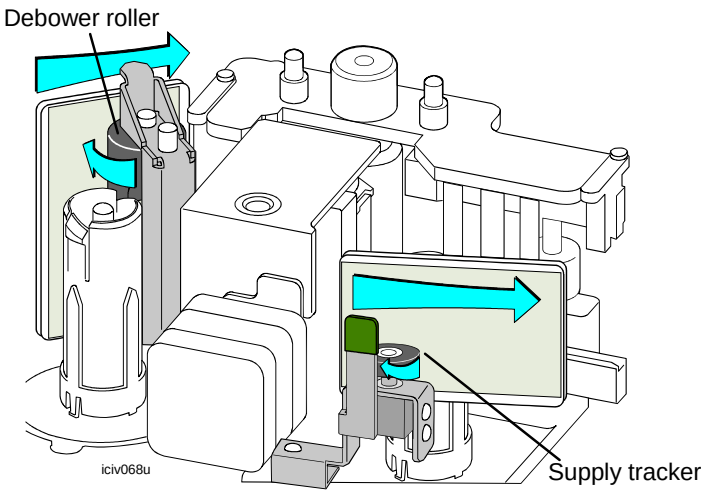


Figure 7-5: Clean the supply tracker and debower roller

8 Roll the sticky surface of the cleaning card against the overlay or topcoat supply tracker. Rotate the supply tracker to clean all sides.

ℹ Do not touch the surface of the supply tracker with your fingers. Oils from the skin can cause the debower to slip or can affect card quality.

9 Dispose of the used cleaning card.

10 Continue with other cleaning tasks, such as cleaning the card input and output trays and cavities.

♦

Cleaning the card trays and cavities

The card input tray requires regular cleaning because it holds unprocessed cards, which can have particles or powder on them. The card output tray should be kept clean so it does not negatively affect card quality. The cavities that hold the card input and output trays include sensors that monitor whether trays are empty or full.

The frequency of cleaning depends on the cards and the environment in which the printer operates. Clean the trays and cavities weekly or at least every 5000 cards. If the printer is used in a clean environment, clean the card input and output trays and cavities at least once a month. If the printer is used in a dusty or otherwise dirty environment, clean the printer daily or weekly.

Tools to use:

- Vacuum cleaner with attachments
- Clean, lint-free cloth and mild detergent (As an alternative, isopropanol can be used with the lint-free cloth.)

Clean card trays and cavities

1 Make sure the power for the printer is off.

2 Remove the power cord from the power receptacle.

The printer's top cover can be open or closed for this procedure.

3 Unlatch and lift out the card input and output trays and remove their covers.

4 Remove any cards from the input and output trays.

5 Use the vacuum cleaner to remove any visible particles from the card input and output tray cavities. Be sure to remove dust from the card separator.

6 Use a lint-free cloth and mild detergent to clean the sensor windows in the input tray cavity and the output tray cavity. (See Figure 7-6.)

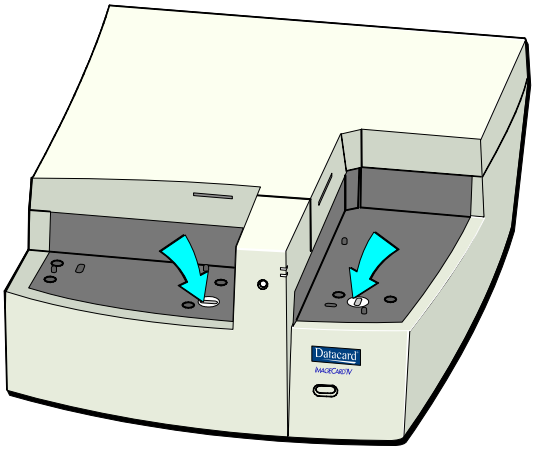


Figure 7-6: Clean sensor windows in the card tray cavities

7 Use the vacuum cleaner to clean all visible surfaces on the inside and outside of the card trays and their covers.

8 Close the cover of the printer if it is open and press to latch it in place.

9 Replace the card input and output trays and their covers and latch them in place.

Lock the printer if needed.

10 Plug the power cable into the receptacle.

Continue with other care and cleaning tasks or resume card printing.

♦

Cleaning the printhead

The printhead can have contamination stuck to it. You might notice this contamination as unprinted lines on printed cards. Use a cleaning pen to remove the contamination from the printhead and restore the quality of printed cards.

Clean the printhead only when needed, such as when:

- The printhead has been accidentally touched, such as when changing supplies or fixing a card jam
- Replacing the printhead
- You observe problems with card appearance, as instructed in “Troubleshooting” on page 8-1.

Tools to use:

- Cleaning pen

Clean the printhead

1 Make sure the power for the printer is off.

2 Remove the power cord from the power receptacle.

Unlock the printer if needed.

3 Push down on the corner of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

4 Remove the print ribbon cartridge. See “Removing the print ribbon cartridge” on page 4-2.

Move the cable away from the printhead to avoid pinching the printhead cable wires.

5 Press the printhead cage stop and move the printhead back.

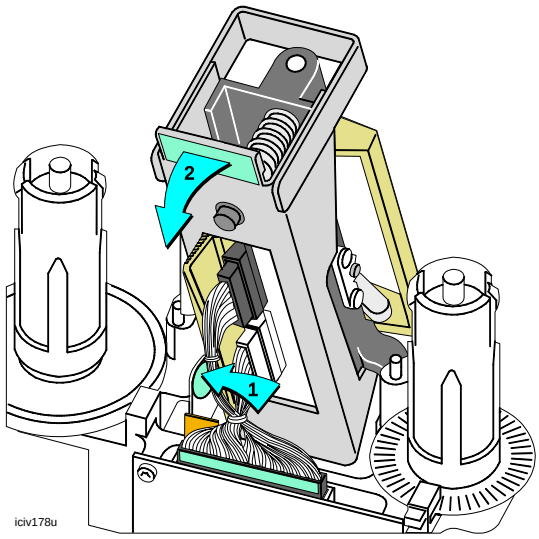


Figure 7-7: Press the printhead cage stop

6 Open the cleaning pen.

7 Using firm pressure, move the cleaning pen up and down along the length of the printhead edge. Be sure to clean the rounded edge of the printhead completely.

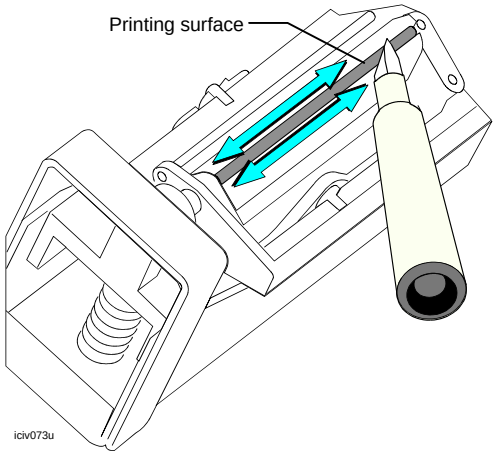


Figure 7-8: Clean the printing surface of the printhead

8 Lift the printhead to move it to the resting position. Do not latch the printhead at this time.

9 Replace the print ribbon cartridge. See “Replacing the print ribbon cartridge” on page 4-4.

10 Close the cover of the printer and press to latch it.

Lock the printer if needed.

11 Plug the power cable into the power receptacle.

Resume normal operation of the printer.

♦

Cleaning the magnetic stripe head

The magnetic stripe head in the ImageCard IV printer directly contacts the card's magnetic stripe when encoding data. The head can become dirty, which interferes with its ability to encode data successfully. Use a cleaning pen to remove the particles or coating from the magnetic stripe head and restore the reliability of encoding.

Clean the magnetic stripe head only when you receive messages about encoding problems.

Tools to use:

- Cleaning pen

Clean the magnetic stripe head

1 Make sure the power for the printer is off.

2 Remove the power cord from the power receptacle.

Unlock the printer if needed.

3 Push down on the corner of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

4 Remove the print ribbon cartridge. See “Removing the print ribbon cartridge” on page 4-2.

5 If the printer has a topcoat or overlay station in location 1, remove the supply cartridge to enable the card track gate to open farther. See “Removing the topcoat cartridge” on page 4-14.

6 Lift the card track gate release (step 1 in Figure 7-9) and move the gate back (step 2 in Figure 7-9) to allow access to the magnetic stripe head.

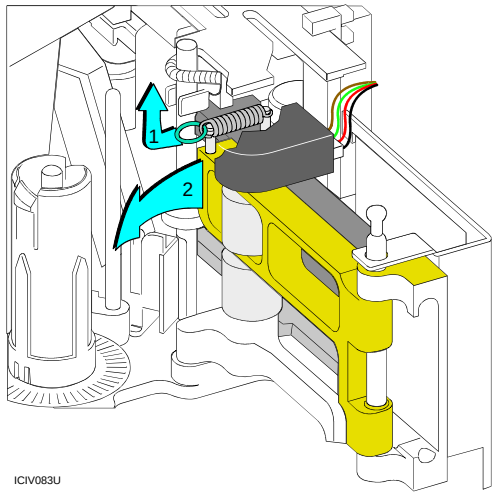


Figure 7-9: Open the card track gate

7 Open the cleaning pen.

8 Hold a finger behind the magnetic stripe head to support it (A in Figure 7-10). Using gentle pressure, move the cleaning pen back and forth on the silver surface of the magnetic stripe head.

⚠ Do not use firm pressure. If you do, components of the magnetic stripe module might be pushed out of alignment. Use light pressure and more repetitions.

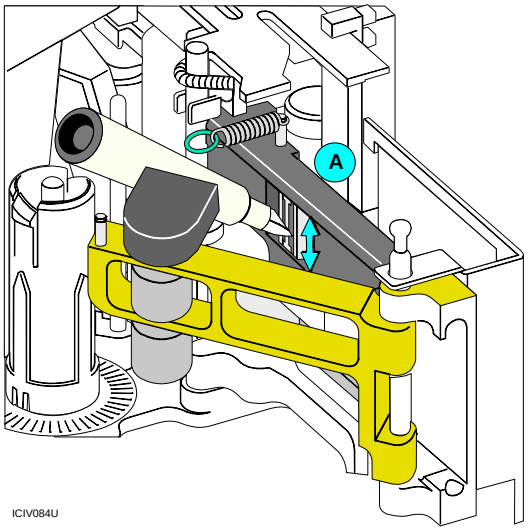


Figure 7-10: Gently clean the magnetic stripe head

9 Close the card track gate.

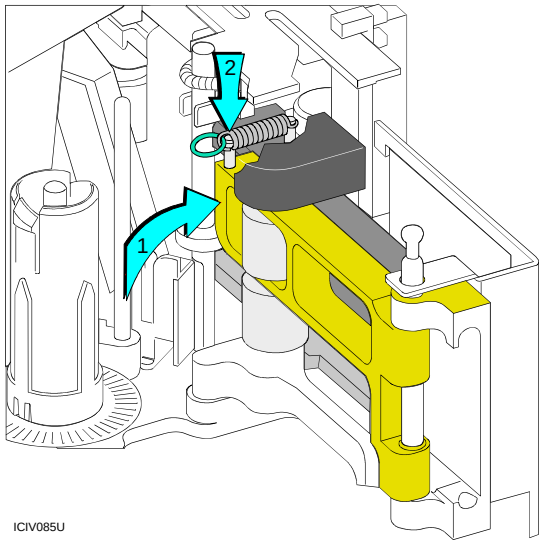


Figure 7-11: Close the card track gate

10 Replace the print ribbon cartridge. Also replace the topcoat or overlay cartridge if it was removed. See “Loading supplies” on page 4-1.

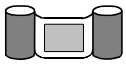
11 Close the cover of the printer and press to latch it. Lock the printer if needed.

12 Plug the power cable into the power receptacle.

Resume normal operation of the printer.

♦

Cleaning the heated roller



At times, the heated roller in the optional overlay or topcoat station can have deposits that affect card appearance. Clean the heated roller to remove deposits and improve card appearance.

Clean the heated roller

1 Power off the printer. The heated roller in the overlay or topcoat station operates at 400° F (200° C). Wait 30 minutes or until the heated roller area is cool.

⚠ The cleaning stick can withstand the operating temperature of the heated roller. However, your hands will be close to the heated roller. Wait until the heated roller is cool to avoid burning your hands.

Unlock the printer if needed.

2 Push down on the corner of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

3 Remove the supply cartridge to access the heated roller.

⚠ Use only the cleaning stick on the heater roller. Tools and sharp objects can permanently scratch the heated roller and reduce card quality.

4 Use the cleaning stick to remove deposits from the heated roller.

a Push the cleaning stick up and down on the heated roller (step 1 in Figure 7-12).

b Use the cleaning stick to move the heated roller counterclockwise and make another area available for cleaning (step 2 in Figure 7-12).

ⓘ If the heated roller does not move, clean the visible area and continue with step 5.

c Repeat steps a and b to clean the entire area of the heated roller.

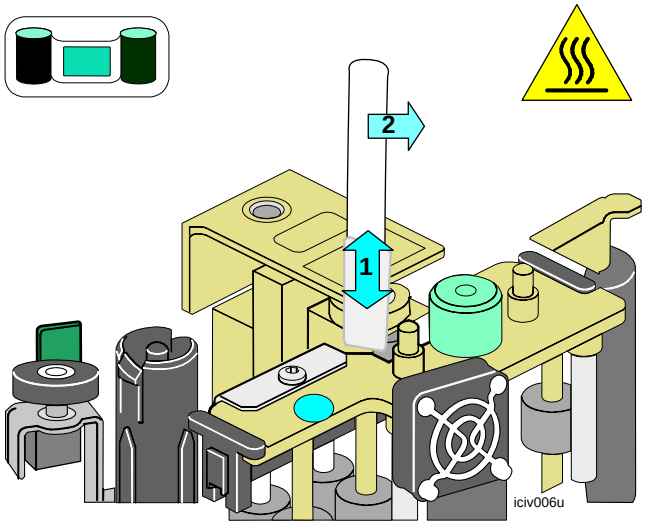


Figure 7-12: Clean the heated roller

5 Replace the supply cartridge.

6 Close the cover of the printer and press to latch it. Lock the printer if needed.

7 Power on the printer to resume card production.

8 Repeat if needed.

♦

Replacing the printhead cartridge

The printhead in the ImageCard IV printer has a direct effect on print quality. The printhead is subject to wear, which reduces card quality. If cleaning the printhead does not restore card quality, replace the printhead cartridge.

Contact your service provider before replacing the printhead cartridge. The service provider might recommend additional steps to take, depending on your situation, to restore print quality.

Tools to use:

- Electrostatic discharge (ESD) strap

Remove the printhead cartridge

1 Make sure the power for the printer is off.

You can damage the printhead if you do not power off the printer.

2 Remove the power cord from the power receptacle.

Unlock the printer if needed.

3 Push down on the corner of the printer's top cover to unlatch it. Lift the top cover to the fully upright position.

4 Remove the print ribbon cartridge. See “Removing the print ribbon cartridge” on page 4-2.

5 Put on the ESD strap. Follow the instructions with the strap.

6 Push the locking tabs to the side (step 1 in Figure 7-13). Remove the printhead cable from the printhead board (step 2 in Figure 7-13).

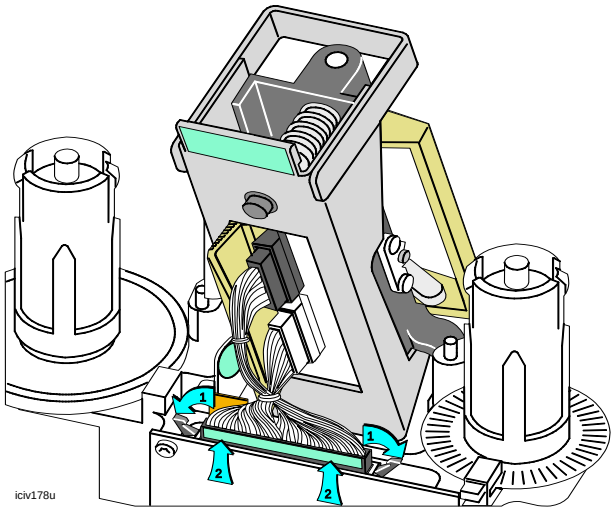


Figure 7-13: Remove the printhead cable from the board

Move the cable away from the printhead to avoid pinching the printhead cable wires.

7 Press the printhead cage stop (step 1 in Figure 7-14) and move the printhead back (step 2 in Figure 7-14).

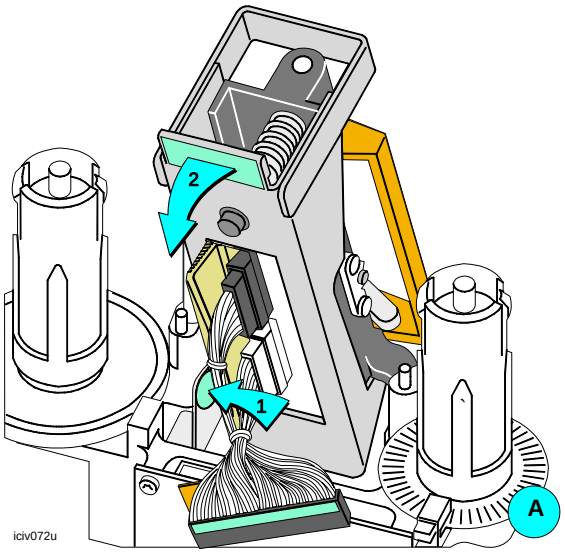


Figure 7-14: Press the printhead cage stop

Avoid bumping the wheel at the bottom of the supply spindle (A in Figure 7-14).

8 Push up on both sides of the printhead cartridge to release the printhead from the cage. Pull the printhead cartridge back until both side pins release from the clips (Figure 7-15).

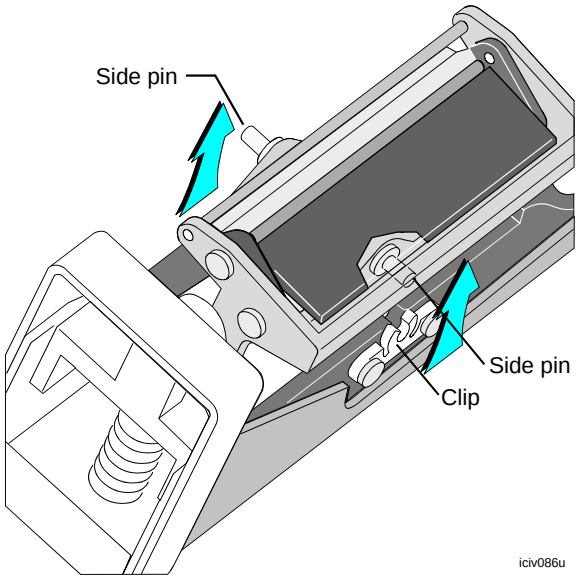


Figure 7-15: Remove the printhead from the cage

9 Remove the printhead from the printhead cage. Carefully guide the printhead cable through the printhead cage. Move the printhead cage if needed to remove the printhead cable.

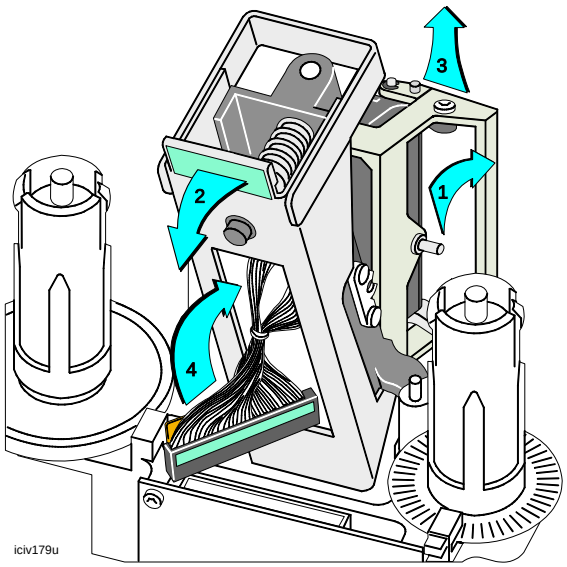


Figure 7-16: Guide the printhead cable through the cage

♦

After you remove the printhead cartridge, replace it with a new printhead.

Replace the printhead cartridge

1 Make sure the power for the printer is off.

ⓘ You can damage the printhead if you do not power off the printer.

ⓘ Make sure that the ESD strap is on and connected to the printer, according to the instructions on the package.

2 Remove the new printhead cartridge from the packaging.

3 With the bar of the printhead cartridge toward the middle of the printer, pass the connector and printhead cable through to the back of the printhead cage (Figure 7-17).

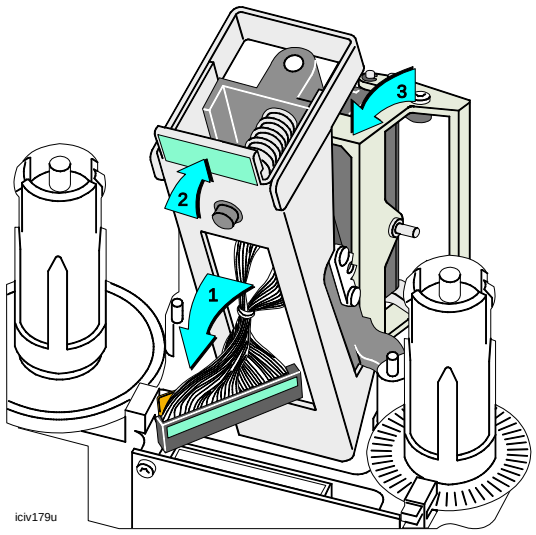


Figure 7-17: Pass the connector through the printhead cage

4 Lift the printhead cage to move it to the resting position.

5 Grasp the printhead and align the side pins with the clips in the printhead cage. Press firmly on the ribbed side of the printhead (step 1 in Figure 7-18) and then the flat side (step 2 in Figure 7-18) in until the pins are firmly seated in the clips.

Make sure both side pins are firmly seated in the clips.

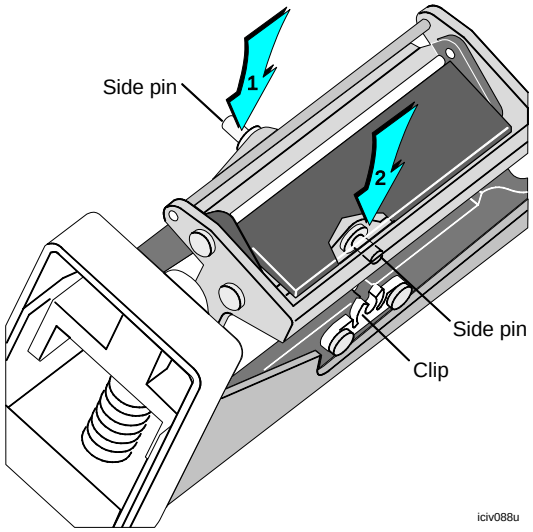


Figure 7-18: Replace the printhead in the cage

If the printhead does not look similar to Figure 7-18 or does not snap into place, the printhead cartridge might be backward.

6 Align the connector and the receptacle with the green label away from the printhead. The connector fits into the receptacle in only one way, as shown in Figure 7-19.

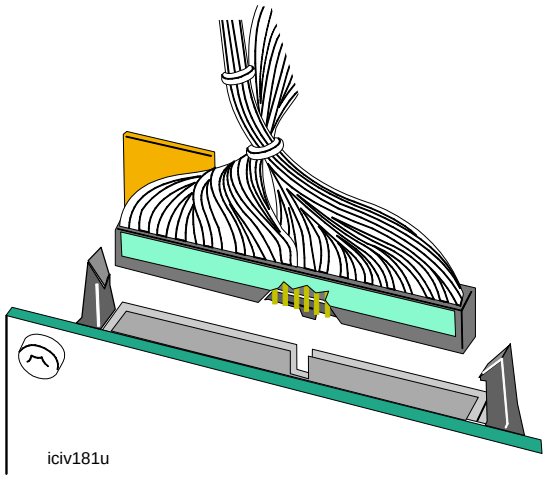


Figure 7-19: Align the cable notch with the slot

7 Press the printhead cable into the connector on the printhead board until it is seated (Figure 7-20).

⚠ Do not press on the wires of the cable.

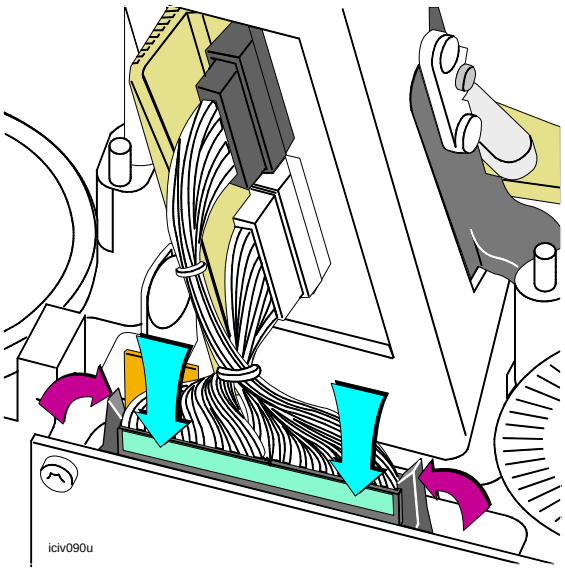


Figure 7-20: Attaching the printhead cable to the board

8 Open the cleaning pen.

9 Using firm pressure, move the cleaning pen up and down along the length of the printhead edge. Be sure to completely clean the rounded edge of the printhead.

10 Remove the ESD strap.

11 Replace the print ribbon cartridge. See “Replacing the print ribbon cartridge” on page 4-4.

12 Close the cover of the printer and press to latch it.

Lock the printer if needed.

13 Plug the power cable into the power receptacle.

14 Make a printer test card. See “Making and evaluating test cards” on page 8-4.

Evaluate the printing on the test card. See “Problems with card appearance” on page 8-9 for guidance on solving most problems.

15 Observe the black box printed near the edges of the test card. If the location does not match on both long edges, the printing position might need to be adjusted. See driver help for the steps to adjust the printing position.

♦

Troubleshooting

8

This chapter explains how to troubleshoot the Datacard® ImageCard® IV photo ID printer and how to obtain service. It explains:

- What to do if you think the printer is not working
- How to make test cards
- Problems you might see in the appearance of cards
- How to obtain service
- How to package the printer to return for service

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

- Record the printer model serial number located on the back of the printer, shown in Figure 8-1.

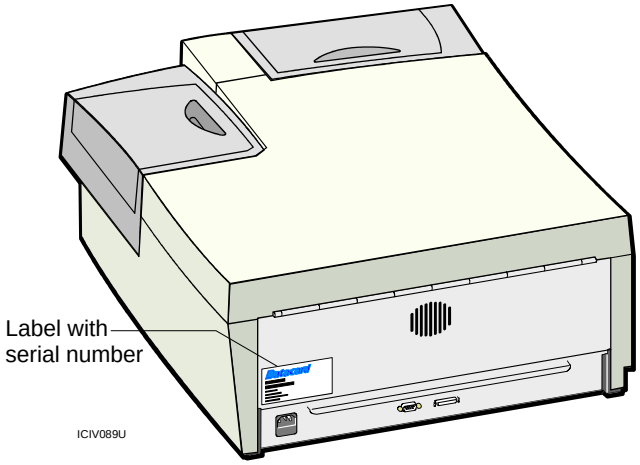


Figure 8-1: Location of printer serial number

The last three or four digits form the sequential serial number, shown in Figure 8-2.

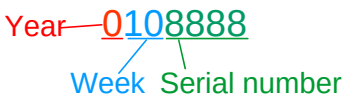


Figure 8-2: Printer serial number

- Keep notes on the problem, including the message number and the solutions you attempt.
- 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.
  - Lot number of the holographic or clear topcoat if used. This information is located on the package or label of the supply.
  - Lot number of the laminate (overlay) supply roll if used. This information is located on the package or label of the supply.

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

Troubleshooting guide

Use the following to help you locate information about different types of problems.

Problem	Location
Printer beeps without a message displayed on the PC	See “Responding to messages” on page 5-14.
Installation problems	See “Installing the printer driver” on page 3-11.
Appearance of printed cards	See “Problems with card appearance” on page 8-9.
Communication between PC and printer	See “Setup tips” on page 3-18.
Messages displayed on the PC	Click the Help button on the message box.
Printer beeps because of a problem and a message is displayed on the PC	Click the Help button on the message box.
Card did not print as expected	See “Working with Properties and other driver dialog boxes” on page 6-2 and the *e-Guide for ImageCard IV Printers*.

If you think the printer is not working

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 representative.

1 Make a printer test card, following the steps in “Making and evaluating test cards” on page 8-4.

   If the printer does not make a test card, the printer is likely not working properly.

2 Print a sample card, following the steps in “Printing sample cards” on page 3-18. As an alternative, you can print a Windows test page, following the steps in “Windows test page” on page 8-6.

   If the sample card or Windows test page does not print, but the printer test card prints, the printer driver or PC is likely not set or operating properly.

3 Check “Setup tips” on page 3-18 to make sure the PC and printer are set up correctly.

4 Make sure the printer is the selected printer in the card creation application.

5 Use the card creation application to print a card. See “Making cards” on page 5-5.

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 and evaluating 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 , overlay, or topcoat) 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.

You can also make sample cards using the driver sample card or your card creation application to test print quality and card design. See “Printing sample cards” on page 3-18.

Follow these steps to make printer test cards on all supported Windows operating systems.

Make a printer test card

The ImageCard IV printer does not need to be connected to a PC to print this card.

1 Power off the ImageCard IV printer.

2 Confirm that all supplies are loaded: cards, print ribbon, cleaning tape, and optional overlay or topcoat material. See “Loading supplies” on page 4-1 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 the high coercivity blank cards shipped in the supplies kit.

3 Press and hold the Ready button (1), and then power on the printer (2) as shown in Figure 8-3. Hold the Ready button until the printer sounds three tones, usually 5 to 10 seconds.

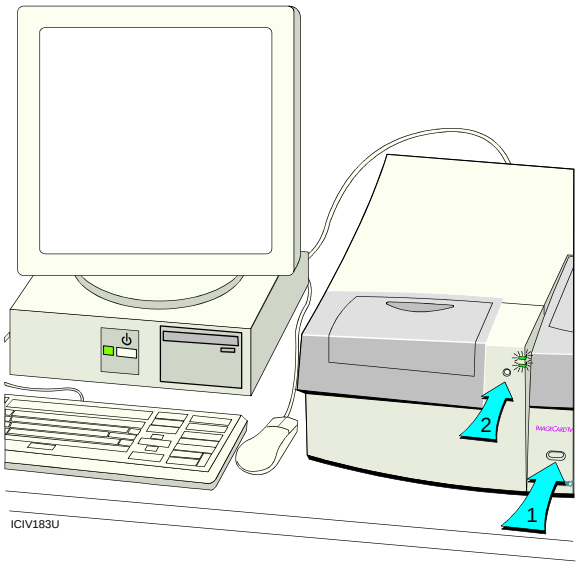


Figure 8-3: Press and hold Ready button (1) and then Press Power switch (2)

4 Release the Ready button. You hear the internal components initialize. Allow 30 to 60 seconds for the printer to begin printing the test card. The status light will flash green while the printer is processing the data.

If the printer includes a topcoat station, an overlay station, or both, the stations might require time to heat up. The card pauses and the printer makes a series of beeps while the stations are warming up.

5 Remove the cover of the card output tray and remove the card. Replace the cover of the card output tray.

6 A printer test card is shown in Figure 8-10.

If the printer test card did not print successfully, see if there are problems with the printer such as jammed cards or an out of ribbon condition.

♦

Printer test card

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

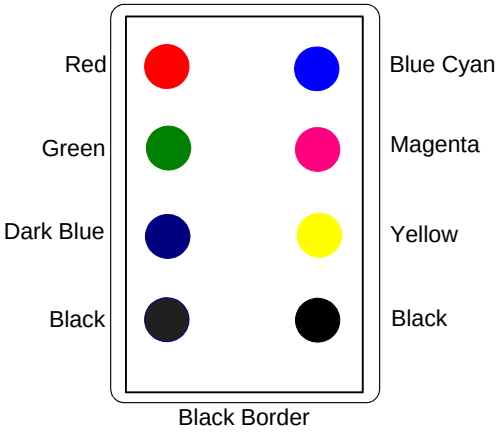


Figure 8-4: ImageCard printer test card (using color ribbon)

Your service provider might ask you to use a different procedure to make a printer test card. The card printed might have additional areas printed on it. For UltraGrafix printers, the test card is printed with one color, such as black.

Check the following:

- The test card has the pattern shown on the front of the card. The back of the card will be printed with a similar pattern if the printer includes a duplex module.
- If a magnetic stripe module is installed in the printer and enabled, the following data is encoded on the card:

Track	Format	Data
Track 1	(IATA)	TEST PATTERN IATA CHARACTER SUBSET 0123456789
Track 2	(ABA)	0123456780123456789O123456789
Track 3	(TTS)	0123456789=9876543210
Track 3	(NTT)	0123456789=9876543210

See“Magnetic stripe encoding” on page D-1 for more information about magnetic stripe tracks.

- 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.
- If a topcoat station is installed in the printer, topcoat is applied to the front of the card.
- If an overlay station is installed in the printer, an overlay patch is applied to the front of the card.

Windows test page

Follow these steps to print a Windows test page on all supported operating systems.

Print the Windows test page

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. Click once on the printer icon.

3 Select File from the Printers menu bar, and then select Properties. The Properties dialog box appears.

4 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. The “Setup tips” on page 3-18 provide the information you need to address problems with PC to printer communication.

5 Remove the cover of the card output tray and remove the card. Replace the cover of the card output tray.

The card should look similar to the cards shown in Figure 8-5 and Figure 8-6. 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).

If it does not print at all, see “Setup tips” on page 3-18.

Figure 8-5: Windows test page, portrait orientation

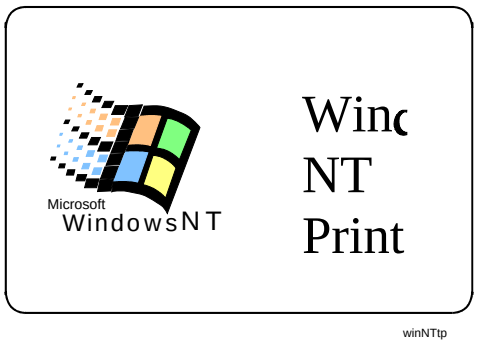


Figure 8-6: Windows test page, landscape orientation

The Windows test page can have a 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.

♦

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, Default Document Properties, or Printing Preferences dialog box.

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

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.

Print a magnetic stripe test card

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

1 Open the Printer Toolbox if needed. See “Using the Printer Toolbox” on page 6-10.

2 Make sure that magnetic stripe cards are loaded in the card cartridge. (See “Loading cards” on page 3-5 for information on loading cards.)

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). See “Magnetic stripe encoding” on page D -1 for more magnetic stripe information.
– NTT track: NTT formatted data on the track.

4 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.

♦

Problems with card appearance

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

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

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

Problem	Troubleshooting
Print quality	Table 8-1 on page 8-10
Topcoat quality—print ribbon	Table 8-2 on page 8-16
Topcoat quality—optional topcoat station	Table 8-3 on page 8-18
Laminate quality—optional overlay station	Table 8-4 on page 8-20

Print station

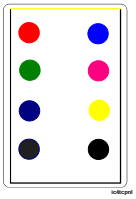
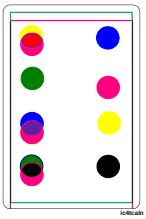
Table 8-1 describes problems that can originate in the print station.

Table 8-1: Print quality problems

What you see	Possible causes	Solutions
One or more unprinted lines run the entire length of the card. 	The printhead might be dirty or damaged.	Clean the printhead. See Chapter 7. Run a test card. See this chapter. If cleaning does not solve the problem, replace the printhead. See Chapter 7.[#]
Part of the printed card is blank. 	Cards might not meet specifications.	Obtain and use a different supply of cards. See Appendix A.
	Cards might be dirty.	Increase the frequency of cleaning. See Chapter 6. Run a cleaning cycle. See Chapter 7.
	The printhead cable might not move freely, restricting printhead alignment.	Make sure the printhead cable is not jammed. See “Replacing the printhead cartridge” in Chapter 7.
	The printhead cartridge might be misaligned.	Set the position of printing. See Chapter 6.
Text is not printed on the card. 	Text to print on the card was formatted using a non-TrueType font.	Format text to print using only TrueType fonts.

[#] Obtain guidance from service before performing this task.

Table 8-1: Print quality problems

What you see	Possible causes	Solutions
The leading or trailing edge of the printed card is not the expected color. 	Cards might be slipping in the card track. Two cards might have been picked. The print ribbon might not be Datacard-recommended. The ribbon registration might be incorrect.	Clean the inside of the printer. Run a cleaning cycle, then clean the rollers. See Chapter 7. Set the card thickness. See Chapter 3. Fan cards before inserting them in the card cartridge. Obtain and use Datacard-recommended print ribbon. See Appendix A. Change the ribbon panel length. See the *e-Guide.*[#]
No image is printed on the card or the printing is very light. 	The ribbon is loaded incorrectly. The printhead cartridge cable might be loose. The printhead cable or printhead cartridge might be damaged. The printhead cartridge might not be installed properly.	Remove and replace the ribbon. See Chapter 4. Power off the printer. Make sure the printhead cable is securely connected at both ends. See Chapter 7. Replace the printhead. See Chapter 7.[#] Remove and reinstall the printhead cartridge. See Chapter 7. If the problem persists, contact your service representative.
One color panel is not aligned correctly with other panels. 	Cards might be slipping in the card track. The card registration might be incorrect.	Clean the inside of the printer. Clean the rollers using the printer cleaning card.See Chapter 7. Set the position of printing. See Chapter 6.[#] If the problem persists, contact your service representative.

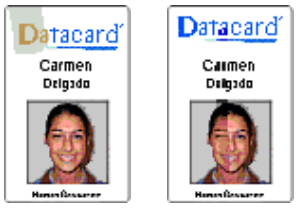
[#] Obtain guidance from service before performing this task.

Table 8-1: Print quality problems

What you see	Possible causes	Solutions
Printed card images (photos) are blurry. Printed cards, including text, are blurry. 	The image capture system needs adjustment. The rollers may be dirty. The cards may not meet specifications. The printhead may be dirty. The print station needs fine tuning.	See the information for the image capture system. Run a cleaning cycle, then clean the rollers. See Chapter 7. Obtain and use a different supply of cards. See Appendix A. Clean the printhead. See Chapter 7. If the problem persists, contact your service representative.
All card data is positioned unevenly on the card. 	The card registration might be incorrect. The print station needs fine tuning.	Set the position of printing. See the *e-Guide*.[#] If the problem persists, contact your service representative.
Card is printed upside down (the image is rotated 180 degrees). 	The card creation application has rotated the card. The card rotation setting might be incorrect.	See the information for the card creation application. Set the card rotation using the Properties (98), Printing Preferences (2000 or XP), or Default Document Properties (NT) dialog box. See Chapter 6.

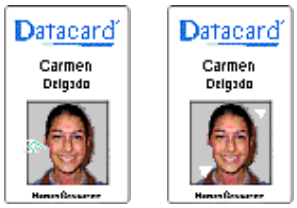
[#] Obtain guidance from service before performing this task.

Table 8-1: Print quality problems

What you see	Possible causes	Solutions
Printed card images (photos) look faded. Printed cards, including text, look faded. 	The image capture system needs adjustment.	See the information for the image capture system.
	Print ribbon may have been stored improperly or damaged.	Change the print ribbon. See Chapter 4. Print a test card. See Chapter 8.
	The cards may not meet specifications.	Obtain and use a different supply of cards. See Appendix A.
	The printhead may be dirty.	Clean the printhead. See Chapter 7.
	The print ribbon is not Datacard-recommended ribbon.	Use only Datacard ribbon in the ImageCard IV printer. If the problem persists, contact your service representative.
Part of the printed image is discolored. 	Cards might have fingerprints or other dirt on them.	Handle cards without touching the surface to be printed. Wear gloves when handling unprinted cards.
	The cards might be contaminated or otherwise not meet specifications.	Obtain and use a different supply of cards. See Appendix A.
	The rollers might be dirty.	Run a printer cleaning card, change the cleaning sleeve, then clean the rollers. See Chapter 7.
	A signature panel is located on the other side of the card.	Redesign the card to avoid printing photos over signature panel residue.

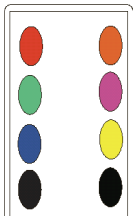
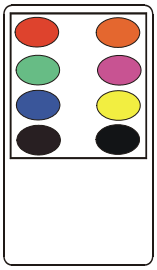
Obtain guidance from service before performing this task.

Table 8-1: Print quality problems

What you see	Possible causes	Solutions
The printed card shows small unprinted spots. 	The card is scratched, the card surface is uneven, or the card edge has burrs.	If the problem occurs frequently, obtain and use a different supply of cards. See Appendix A.
	The printer rollers might be dirty.	Run a cleaning card. See Chapter 7.
	The printer might need cleaning.	Clean the inside of the printer. See Chapter 7.
	The cleaning mechanism might not be operating often enough.	Increase the frequency of cleaning. See Chapter 6.
The printed card shows wavy lines along the length of the card (woodgrain). 	The printhead intensity setting is too high.	Lower the printhead intensity. See the e-Guide.[#]
	The print ribbon is not loaded correctly.	Load the print ribbon again. Make sure the cartridge is firmly seated. See Chapter 4.
	The printhead is not aligned correctly.	Contact your service representative.
The printed card shows lighter or darker bands across the width. 	The printhead intensity setting is too low.	Increase the printhead intensity setting. See the e-Guide.[#]

[#] Obtain guidance from service before performing this task.

Table 8-1: Print quality problems

What you see	Possible causes	Solutions
The card shows irregular lighter or darker spots. 	The print ribbon is wrinkling because the intensity setting is too high. The printhead is not aligned correctly.	Lower the printhead intensity setting. See the *e-Guide*. Contact your service representative.
The card shows wrinkles in dark areas of printing. 	The printhead intensity is too high. The printhead is not aligned correctly.	Decrease the printhead intensity setting. See the *e-Guide*.[#] Contact your service representative.
Part or all of the printed image is expanded. 	The printhead is not installed properly.	Remove and reinstall the printhead cartridge. See Chapter 4. If the problem persists, contact your service representative.
Part or all of the printed image is compressed. 	The card path may be obstructed. The rollers might be dirty. The cards might not meet specifications.	Check the card transport track for jams. Clear any card jams. Run a printer cleaning cycle, then clean the rollers. See Chapter 4. Obtain and use a different supply of cards. See Appendix B. If the problem persists, contact your service representative.

[#] Obtain guidance from service before performing this task.

Table 8-1: Print quality problems

What you see	Possible causes	Solutions
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.	See the information for the image capture system. Change settings on the Color Settings tab of the Printer Toolbox. See the *e-Guide.*

Topcoat (T panel) applied using the print station

You might apply topcoat to the card using a T panel as part of the print ribbon or using an optional topcoat station. Holographic topcoat can be applied only in the topcoat station.

When you apply topcoat, you might see problems. See the appropriate table for the application method for the problem you observe. Use this table to address problems you see with topcoat (T panel) applied using the print ribbon.

Table 8-2: Topcoat (T panel) quality problems—print ribbon

What you see	Possible causes	Solutions
Random scratches appear in the topcoat of the printed card.	The inside of the printer might be dirty.	Clean the inside of the printer. Clean the rollers. See Chapter 7. Replace the supply cartridges, and then run a test card. See Chapter 8.
	Supplies were mishandled.	Store supplies in a clean environment. Keep supplies in their packaging until loaded in the cartridge. If cartridges are pre-loaded, handle them carefully to prevent contamination.

[#] Obtain guidance from service before performing this task.

Table 8-2: Topcoat (T panel) quality problems—print ribbon

What you see	Possible causes	Solutions
The topcoat shows bands across the width of the card. 	The printhead intensity is too low. The printhead is not aligned correctly.	Increase the printhead intensity setting for topcoat. See the *e-Guide*.# Contact your service representative.
The topcoat shows lines along the length of the card. 	The printhead intensity is too high. The printhead is not aligned correctly.	Lower the printhead intensity setting for topcoat. See the *e-Guide*.# Contact your service representative.
A short edge of the topcoat does not stick to the card. 	The printhead intensity is too low. The printhead is not aligned correctly.	Increase the printhead intensity setting for topcoat. See the *e-Guide*.# Contact your service representative.
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 is not aligned correctly.	Lower the printhead intensity setting for topcoat. See the *e-Guide*.# Contact your service representative.

Obtain guidance from service before performing this task.

Optional topcoat station

This section describes problems that might originate in the topcoat station.

Table 8-3: Topcoat quality problems—topcoat station

What you see	Possible causes	Solutions
Random scratches appear in the topcoat of the printed card.	The inside of the printer is dirty.	Clean the inside of the printer. See Chapter 7. Run a test card. See Chapter 8.
	Supplies were mishandled.	Store supplies in a clean environment. Keep supplies in their packaging until loaded in the cartridge. If cartridges are pre-loaded, handle them carefully to prevent contamination.
Repeating scratches or marks appear in the topcoat of the printed card.	The heated roller is dirty or damaged.	Clean the heated roller. See Chapter 7. In the problem persists, contact your service representative.
The topcoat shows one or more bands across the width of the card. 	The topcoat supply is not loaded correctly in the cartridge or the cartridge is not fully seated in the topcoat station.	Load the topcoat supply in the cartridge again. When replacing the topcoat cartridge, make sure it is fully seated in the station and locked. See Chapter 3.
	If you have both topcoat and overlay stations, the topcoat supply might be installed in the overlay cartridge.	Check the supply material in the overlay cartridge. Load the supply in the cartridge again or load the correct supply in the cartridge. See Chapter 4.

[#] Obtain guidance from service before performing this task.

Table 8-3: Topcoat quality problems—topcoat station

What you see	Possible causes	Solutions
The topcoat shows wavy lines along the length of the card (woodgrain). 	The guide bars in the cartridge are bent or misaligned. The topcoat station needs fine tuning.	Use a new topcoat cartridge. See Appendix A. Contact your authorized service representative.
The hologram of the topcoat does not appear on the card.	The Apply Material setting is No. Clear topcoat or laminate supply is installed in the topcoat cartridge. The topcoat supply is not loaded correctly in the cartridge.	Change the setting. See Chapter 3. Remove the topcoat cartridge and change the supply material to the desired type. See Chapter 4. Remove the topcoat cartridge. Load the supply in the cartridge again. See Chapter 4.
Particles of topcoat appear under the holographic topcoat or laminate. ℹ All topcoat materials release particles. Cleaning the inside of the printer can help control topcoat particles.	The inside of the printer contains topcoat particles. The supply is not a Datacard-approved supply material. The lot number of supply material produces particles excessively.	Clean the inside of the printer. See Chapter 7. Obtain Datacard-approved topcoat material. Contact your Datacard supplies vendor.
A long edge of the topcoat does not stick to the card. (It might have a gray appearance.) 	The temperature of the heated roller is too low. The card has a T-panel applied as part of the print ribbon. The heated roller is tilted and is prevented from pivoting.	Contact your service representative. Holographic topcoat is not designed to be applied to cards with a printed topcoat (T panel). Switch your ribbon type or stop using holographic topcoat. Contact your service representative.

Obtain guidance from service before performing this task.

Optional overlay station

This section describes problems originating in the optional overlay station. Holographic or clear laminate can be applied in the overlay station.

When you apply laminate, you might see problems. Use this table to address problems you see with laminate.

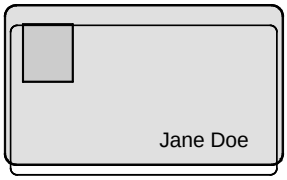
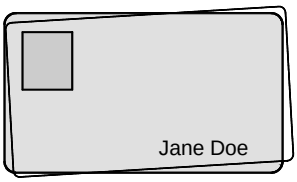
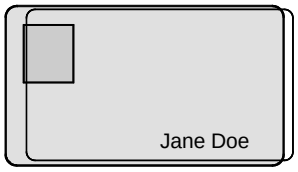
If your printer has the optional topcoat station, see Table 8-3.

Table 8-4: Overlay quality problems

What you see	Possible causes	Solutions
Supply material sticks to leading edge of the card.	Temperature is too high.	Decrease temperature for the overlay station. See the *e-Guide*. #
	The overlay station needs fine tuning.	Contact your service representative.
Supply material pulls the card from the track.	Supply is loaded incorrectly.	Decrease temperature for the overlay station. See the *e-Guide*.#
	Temperature is too high.	Change settings for the overlay station. See the *e-Guide*.#
	You have switched to a different card stock.	Contact your service representative.
	The overlay station needs adjustment.	
Proximity cards do not work after laminate is applied.	Debower is not set for the cards you are processing.	Set the debower to off. See Chapter 3.
Cards are bowed (curved) too much. 	Debower is not set for the cards you are processing.	Set the debower to on. See Chapter 3.
	Temperature is too high for the card stock.	Decrease temperature for the overlay station. See the *e-Guide*.#
		If the temperature is correct for the material, the material is 1.0 or 1.1-mil laminate, and you are using all-PVC cards, switch to composite cards.

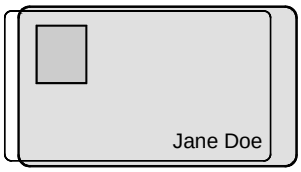
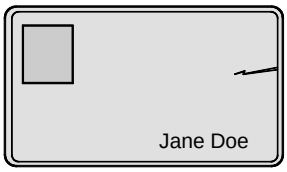
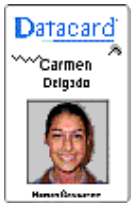
Obtain guidance from service before performing this task.

Table 8-4: Overlay quality problems

What you see	Possible causes	Solutions
Laminate patch is off a long edge of the card. 	Supply material is not loaded correctly in the cartridge.	Load the supply roll correctly. See Chapter 4.
	Supply material is wound loosely on supply roll, possibly because of hand winding.	Remove used supply from the take-up spool. Place spool caps on both supply and take-up spools. See Chapter 3. If the problem does not go away, change the supply roll. See Chapter 3.
Laminate patch is not parallel to card edges. 	Supply material is not loaded correctly in the cartridge, the spool caps are missing, or the cartridge is not firmly seated in the station.	Load the supply roll correctly using the spool caps. See Chapter 4. Make sure there are no obstructions when replacing the cartridge.
	Supply material is wound loosely on supply roll, possibly because of hand winding.	Remove used supply from the take-up spool. Place spool caps on both supply and take-up spools. See Chapter 3. If the problem does not go away, change the supply roll. See Chapter 4.
	The guide bars in the cartridge are bent or misaligned.	Use a new overlay cartridge.
Laminate patch is off the trailing edge of the card. 	There was slack in the supply material.	Apply laminate on another card. If problem repeats, go to the next solution.
	The supply roll and machine settings do not match.	Change supply rolls. If that fixes the problem, request a new supply roll. If it does not, change the supply advance. See the *e*-Guide.[#]
	Supply material is upside down after hand winding.	Load the laminate supply correctly. See Chapter 4.
	Machine settings were changed during service.	Contact your service representative.
	The heated roller does not move.	Contact your service representative.

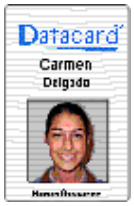
[#] Obtain guidance from service before performing this task.

Table 8-4: Overlay quality problems

What you see	Possible causes	Solutions
Laminate patch is off the leading edge of the card. 	An overlay patch is on the driver roller.	Use a cleaning card. See Chapter 7.
	The rollers are dirty.	Use a cleaning card. See Chapter 7.
	The supply tracker is slipping.	Clean the supply tracker. See Chapter 7.
		Be sure your hands and the materials used are clean and free of grease or oil.
	Machine settings were changed during service.	Contact your service representative.
Laminate patch is wrinkled on the card. 	Supply roll is not pushed firmly onto supply spindle or take-up spool is not pushed firmly onto take-up spindle.	Load the laminate supply again. See Chapter 3.
	The supply spindle needs adjustment.	Contact your service representative.
Particles appear between card and laminate patch. 	The inside of the printer is dirty.	Clean the inside of the printer and use a cleaning card. See Chapter 7.
	The heated roller is dirty.	Clean the heated roller. See Chapter 7.
	The supplies were mishandled.	Store supplies in a clean environment. Keep supplies in packaging until loaded in the cartridge. Handle pre-loaded cartridges carefully to avoid contamination.
	The supplies are not Datacard-recommended.	Obtain and use Datacard-recommended supplies.
	The printer is being used in a dirty environment.	Move the printer to a clean environment or clean the environment.

[#] Obtain guidance from service before performing this task.

Table 8-4: Overlay quality problems

What you see	Possible causes	Solutions
The surface of the card or laminate appears uneven.	The temperature setting is too high.	Change the temperature setting. See the *e*-Guide.#
	The heated roller is damaged.	Turn off the power to the printer. Contact your service representative.
	The card stock is not compatible with the laminate material.	Obtain and use cards that meet specifications or stop using laminate.
The surface of the card has ridges, and the laminate is missing. The printer makes a sound when the card is processed. 	The supply was missing a laminate patch.	Remake the card. If the problem occurs frequently, contact your representative for supplies.

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 service provider.

Before you call for service, make sure you have the information recorded during troubleshooting, as described on page 8-2. Also, make sure you have the serial number 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 requests that 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.

Pack the printer

1 Turn off the power to the printer.

Unlock the printer if needed.

2 Remove the power cord from the printer and power receptacle. Remove the interface cable and any other cables attached to the printer.

- If you are shipping the printer to use at another location, pack the power cord, interface cable, and any other cables in the accessories bag.
- If you are shipping the printer for service, do not ship cables with the printer unless asked to do so.

3 Remove all cards from the card input and output trays.

If you are shipping the printer for service, remove loose cards from the printer if possible. Do not ship cards unless asked to do so.

4 Move the printhead to the lowered position by pushing on the end of the print station cam plate (step 1 in Figure 8-7). The white pins should rest at the end of the indentation, as shown.

5 Make sure all supply cartridges are secured in place.

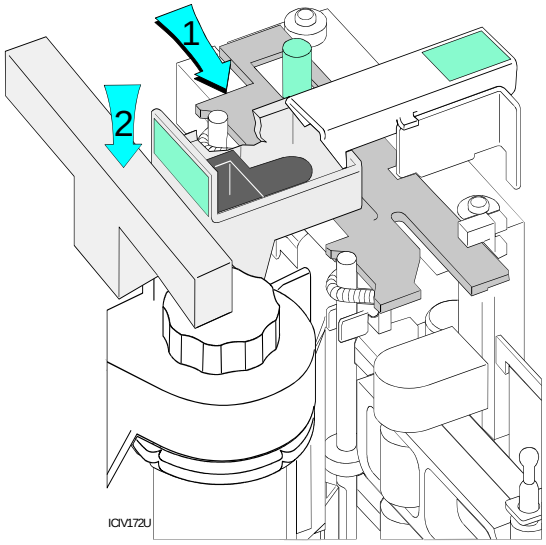


Figure 8-7: Prepare the printhead for shipping

6 Be sure to place the packaging material between the printhead and the print ribbon cartridge (step 2 in Figure 8-7).

7 Close the cover and press down to latch it.

8 Use the original shipping carton, plastic bag, and foam shipping cushions.

9 Latch the card trays to the printer so they do not move during shipment. You can also use clear packing tape to further secure the trays and their covers.

10 Place the plastic bag around the printer and close it.

11 Place the printer on the bottom shipping cushion.

12 Place the top shipping cushion on the printer (step 1 in Figure 8-8).

Service might ask you to ship cards or additional samples of your current supplies. If service requests cards or supply samples, place them in an envelope, plastic bag, or in the accessory bag to prevent damage to the printer.

13 Replace any other shipping materials that are available.

14 Place the accessories bag on top of the shipping cushion (step 2 in Figure 8-8).

If you are transporting the printer to another location for use, be sure to pack this User's Guide, the interface cable, the power cord, any smart card serial cables, printer driver CD-ROM, the cleaning pen and cleaning stick, the warranty, the declaration of conformity, and the optional key in the accessories bag.

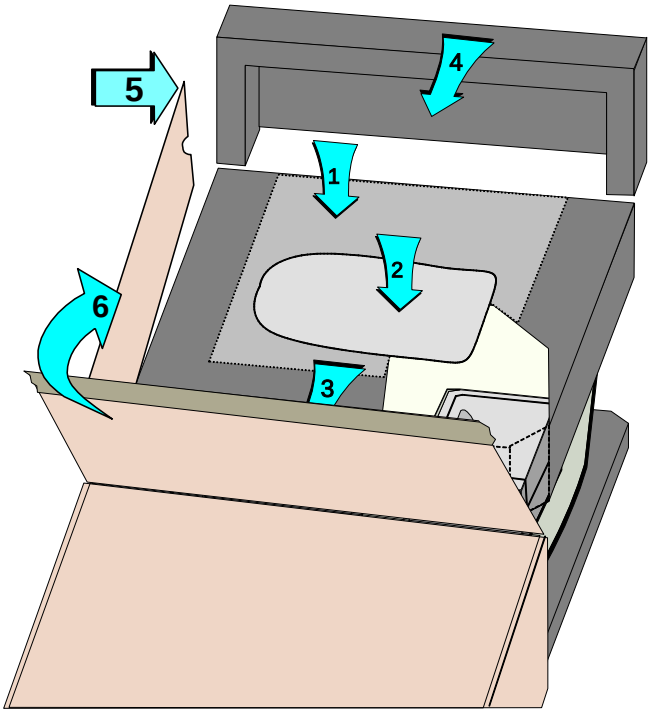


Figure 8-8: Pack the printer for shipping

15 Slide the printer and shipping cushions into the shipping carton (step 3 in Figure 8-8).

16 Place the rear shipping cushion in the box, covering the back of the printer, when the printer is completely in the carton (step 4 in Figure 8-8).

17 Close the cardboard flap at the opening to the shipping carton (step 5 in Figure 8-8).

18 Close the outside flaps on the shipping carton (step 6 in Figure 8-8).

19 Secure the carton with shipping tape. Be sure to wrap around the shipping carton several times to secure it.

20 Put a shipping label on the carton. If you are returning the printer for service, use the address provided by service.

21 Ship the carton. If you are returning the printer for service, follow the instructions provided by service to ship the carton to a service center.

♦

Safety and compliance

A

This appendix 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.

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.

Notice for the European Union

We hereby certify that the Datacard® ImageCard® IV photo ID 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 and China

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
干扰，在这种情况下，使用者會
被要求采用某些适當的對策。

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 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

Supplies and cards

B

This appendix describes specifications, part numbers, and handling for supplies and components used with the Datacard® ImageCard® IV photo ID printer. It includes:

- Personalization supplies, including print ribbons, optional laminate material, and optional topcoat material
- Cards to print
- Cleaning supplies, including cleaning tape, cleaning cards, and the printhead cleaning pen
- Printer driver CD-ROM
- Printer components, including cables, supply cartridges, and the replaceable printhead cartridge

Personalization supplies

Print ribbon and optional topcoat and laminate supplies are used to personalize cards. This section describes Datacard®-certified personalization supplies for the Datacard® ImageCard® IV photo ID printer and how to store them.

Use Datacard-certified supplies in the printer.

Print ribbons

The ImageCard IV printer uses print ribbon with color panels. Color panels are identified by initials for their color as follows: Y=Yellow, M=Magenta (red), C=Cyan (blue). Print ribbons can also include a K panel to print black and a T panel which applies topcoat using the printhead. Consider the card design and the optional modules in the printer when you select the color print ribbon. Use one of the following color print ribbons in ImageCard® IV printers:

Ribbon type	Part number	Images printed	Panel description	Colors	One panel set prints:
YMC#†	806124-101		Three colors	Full-color	Front side of card
YMCK#	806124-402	up to 500	Three colors and true black	Full-color	One side of card OR front–three colors; back–true black
YMCK#	806124-102	up to 165	Three colors and true black	Full-color	One side of card OR front–three colors; back–true black
YMCKT	806124-404	Up to 500	Three colors, true black, and topcoat	Full-color	One side of card OR front–three colors; back–true black & topcoat
YMCKT	806124-104	Up to 135	Three colors, true black, and topcoat	Full-color	One side of card OR front–three colors; back–true black & topcoat
YMCT†	806124-105	Up to 165	Three colors and topcoat	Full-color	One side of card
YMCKK	806124-410	Up to 500	Three colors and two true black panels	Full-color and true black	Front–three colors & true black back–true black
YMCKKT#	806124-412	Up to 250	Three colors, two true black panels, and topcoat	Full-color and true black	Front–three colors & true black back–true black & topcoat

Ribbon type	Part number	Images printed	Panel description	Colors	One panel set prints:
YMCKKT[#]	806124-112	Up to 110	Three colors, two true black panels, and topcoat	Full-color and true black	Front–three colors & true black back–true black & topcoat
YMCKTKT	806124-106	Up to 95	Three colors, true black, topcoat, true black, and topcoat	Full-color and true black	Front–three colors, true black & topcoat back–true black & topcoat
Tonal[#]	597568-101	860	Dye-diffusion black ribbon	Black	Not applicable

#. Laminate or topcoat required on the front of the card.

†. Contact your Datacard representative for availability.

You can use the following single-color (monochrome) print ribbons:

Ribbon type	Part number	Images printed	Panel description	Colors	One panel set prints:
KT	806124-109		True black and topcoat	Black	One side of card
K black	596230-101	1,800	Continuous black	Black	Not applicable
K white	596230-103	1,800	Continuous white	White	Not applicable
K red[#]	596230-104	1,800	Continuous red	Red	Not applicable
K process blue[#]	596230-105	1,800	Continuous process (light) blue	Blue	Not applicable
K green	596230-106	1,800	Continuous green	Green	Not applicable
K silver[†]	596230-107	1,800	Continuous silver	Silver	Not applicable
K gold[†]	596230-108	1,800	Continuous gold	Gold	Not applicable
K burgundy	596230-012	800	Continuous burgundy	Burgundy	Not applicable
K teal	596230-114	1,800	Continuous teal	Teal	Not applicable
K purple	596230-115	1,800	Continuous purple panel	Purple	Not applicable
K warm red	596230-116	1,800	Continuous warm red panel	Warm red	Not applicable
K scratch-off	548237-001	800	Continuous scratch-off panel	Scratch-off	Not applicable

#. Set ribbon type to K; do not use the Always Autodetect setting.

†. Laminate or topcoat required.

If you change the type of ribbon you use, be sure to make the appropriate changes to the printer driver. See “Changing the type of print ribbon” in the *e-Guide for ImageCard IV Printers*.

When you use a monochrome-only print ribbon, use a printhead cartridge designed for monochrome printing for optimum results. When you use a color ribbon that includes a K (monochrome or black) panel, use a color printhead cartridge. See “Printhead cartridge” on page B-13.

Laminate material

Use Datacard DuraGard® laminate material in the ImageCard IV printer if the printer includes an optional overlay station. (Laminate is also called overlay.) Some material types can only be used with the newer metal heated roller. The overlay station has a light blue dot on it if it contains a metal heated roller. If you use 1.0 mil or 1.1 mil laminate, you must also use composite (not PVC) cards because of the heat required to apply 1.0 mil or 1.1 mil material.

If the printer has an optional topcoat station, see "Topcoat material" on page B-6.

The following describes the laminate materials you can use and the roller types required:

Name	Part number	Heater roller	Description
DuraGard 0.6 mil Holographic Laminate	547562-001	Either	Die-cut polyester patches on a carrier material with a tamper-evident image. About 300 uses.
DuraGard 0.6 mil Smart Card Holographic Laminate	547562-052	Either	Die-cut polyester patches on a carrier material with a tamper-evident image. Patch covers all of the card except the area of the smart card chip. About 300 uses.
Duragard 1.1 mil Holographic Laminate	553269-003	Metal only	Die-cut polyester patches, 1.1 mil thick, on a carrier material with a tamper-evident image. About 250 uses.
Duragard 1.1 mil Smart Card Holographic Laminate	553269-004	Metal only	Die-cut polyester patches, 1.1 mil thick, on a carrier material with a tamper-evident image. Patch covers all of card except the area of the smart card chip. About 250 uses.
DuraGard 1.0 mil Clear Laminate	553277-101	Metal only	Full-card die-cut polyester patches, 1 mil thick, on a carrier material. About 250 uses.

Name	Part number	Heater roller	Description
DuraGard Smart Card 1.0 mil Clear Laminate	553277-102	Metal only	Die-cut polyester patches, 1 mil thick, on a carrier material. Patch covers all of the card except the area of the smart card chip. About 250 uses.
DuraGard 0.5 mil Clear Laminate	557171-001	Either	Full-card die-cut polyester patches, 0.5 mil thick, on a carrier material. About 300 uses.
DuraGard Smart Card 0.5 mil Clear Laminate	557171-002	Either	Die-cut polyester patches, 0.5 mil thick, on a carrier material. Patch covers all of card except the area of the smart card chip. About 300 uses.

Datacard recommends that laminate patches not be applied over magnetic stripes or signature panels. Laminate can be applied over topcoat applied in the topcoat station.

Full-card laminate can be applied to contactless (RF) smart cards.

Figure B-1: "Genuine Authentic" holographic laminate or topcoat

Custom material, including custom holograms, are available on topcoat or laminate material. Contact your Datacard representative for more information.

Topcoat material

Use Datacard-approved topcoat material in the ImageCard IV printer, if the printer includes an optional topcoat station. The following describes the topcoat supply to use:

If the printer has an optional overlay station, see “Laminate material” on page B-4.

Name	Part number	Description
"Genuine Authentic" holographic topcoat	557104-500	Single roll of continuous topcoat for about 625 cards.
Clear topcoat	557105-001	Single roll of continuous topcoat for about 625 cards.

Tips for success

- Topcoat material covers the full surface of the card. You cannot use the topcoat station to apply topcoat in selected areas of the card.
- Clear or holographic topcoat can be applied to contactless (RF) smart cards.
- To apply topcoat to selected areas of a card, such as around a magnetic stripe or contacted smart card, use a print ribbon with a topcoat (T) panel, such as YMCKT. Choose print blocking in the SmartDriver so topcoat is not applied over the magnetic stripe, smart card chip or other feature.

Supply roll storage

Follow these guidelines when storing supply rolls:

- The print ribbon, topcoat and laminate supply rolls maintain their 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, card stock, and laminator supply might require secure storage and tracking. Follow your policy for storing and tracking the supplies used to make cards.
- Select a location away from direct sunlight and heat sources, 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 your supplies inventory.

Cards

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

Card specifications

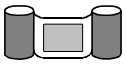
For best results with the ImageCard IV printer, use high-quality card stock that meets the specifications and recommendations described in this section.

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.



If you use an overlay or topcoat station, you must use cards that are at least 0.030 inch or 0.76 mm thick. If you apply 1.0 mil or 1.1 mil laminate to cards, you must use composite cards with a PVC surface, not 100% PVC cards.

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

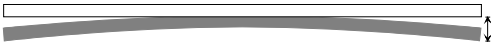


Figure B-2: Excessive card bow

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 ImageCard IV printer.

StickiCards

StickiCards™ adhesive-backed plastic cards, 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 often to remove any adhesive residue. The printhead cleaning pen or an isopropyl alcohol swab will remove the residue.
- Use a print margin of 0.1 or 0.05 inch with StickiCards.
- Do not apply material to StickiCards using a topcoat or overlay (laminator) station.

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 ImageCard IV printer as long as the hole is free of raised areas or burrs. Figure B-3 shows where punched areas are not allowed.

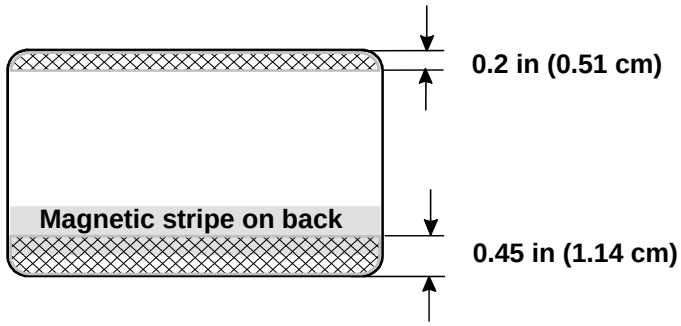


Figure B-3: Pre-punched card block-out areas

The dimensions show how far from the edge any punched areas must be (dimensions include any tolerance):

- The cards cannot have a punched area closer than 0.2 in (0.51 cm) from the left-hand edge (as loaded in the card cartridge).
- The cards cannot have a punched area closer than 0.45 in (1.14 cm) from the right edge (as loaded in the card cartridge).
- If the card has a magnetic stripe, the card cannot be punched anywhere in the stripe.

New cards preferred

The ImageCard IV 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. Printing on cards that have been issued might introduce substances that interfere with card printing or damage the printer. See “Problems with card appearance” on page 8-9 to address card appearance problems with pre-printed cards.

If a previously printed card has topcoat (from the T-panel of print ribbon or from the laminator) or laminate applied, the card cannot be printed a second time.

Card quality guidelines

Your cards must meet the following card quality guidelines for the ImageCard IV 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 particle detector in the ImageCard IV printer attempts to detect and reject cards with particles.
- 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 other sections in this appendix 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. Raised burrs can also cause more than one card to be picked, resulting in card jams.

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 ImageCard IV 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 ImageCard IV printer uses the following cleaning supplies.

- Cleaning tape
- Printer cleaning cards
- Printhead cleaning pen
- Heated roller cleaning stick (if the printer includes an optional topcoat or overlay station)

Cleaning tape

Cleaning tape is sold in a single-roll package. The part number is 557575-001 and contains about 65 uses.

The automatic cleaning function uses cleaning tape. You set how often the automatic cleaning function runs in the printer driver. The printer also runs the automatic cleaning function each time you turn the printer power. If you use the default value (after every 20 cards) and keep the printer running, you use one roll of cleaning tape for every 1300 cards you print.

Cleaning card

The ImageCard IV printer uses a cleaning card to remove particles inside the printer left by printing supplies. Plan to use a cleaning card weekly or at least after every 5000 cards. If you use holographic topcoat, use a cleaning card daily or at least after every 1000 cards.

Cleaning cards are sold in packages of 10. The package part number is 557169-001.

Cleaning pen

To maintain print quality and prolong the life of the printhead and other parts, use a cleaning pen. The cleaning pen is also used to clean the optional magnetic stripe head. The cleaning pen is part number 557492-001. Each pen can be used up to eight times.

Heated roller cleaning stick

To correct quality problems with topcoat or laminate applied to cards, use the heated roller cleaning stick. The cleaning stick is part number 548369-001. The cleaning stick is reusable.

Printer driver CD-ROM

The ImageCard IV printer drivers are delivered on a CD-ROM. The CD-ROM also contains associated files and utilities you might need. 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 Printer Software CD-ROM	D:\DEMO32.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 (Use the Add Printer wizard)
Printer driver for Windows Me and 98	D:\Me-98\SETUP.EXE[#]	Custom installation for Windows Me and Windows 98 (Use Demo32.exe)
Printer driver for Windows NT	D:\Nt\ SETUP.EXE[#]	Custom installation for Windows NT 4.0 (Use Demo32.exe)
Network port monitor installation	D:\XP-2000\Net Port Mon Install\ SETUP.EXE[#]	Network port monitor for use with a directly networked printer and Windows 2000 or XP (Use Demo32.exe)
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\ 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.

#. Where D is the drive letter of the CD_ROM drive

†. Where *v* is the current version, such as B or 5.1.

	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 -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.
	D:\e-Guide\SP Series\ SP_Info_Central.chm and other files with names in the SP_xxxxx.chm format.	SP35 e-Guide and Info Central which contains advanced information for the printer.
Adobe Acrobat Reader installation	D:\Adobe\ AR*vvv*ENU.EXE[#†] (and files with other language designations such as jpn)	Installation program for Adobe Acrobat Reader, Version 5.00. The Reader (version 3 or higher) is required to view the e-Guides, part of the help system.
SmartDriver Diagnostics Utility	D:\Support\Diagnostics\ SD_Diagnostics*vvv*.EXE[#†]	Installation program for the SmartDriver Diagnostics Utility, used to identify or fix printer problems
Cleanup Utility	D:\Support\Diagnostics\ SD_CLEANUP*vvv*.EXE[#†]	Installation program for the Cleanup Utility, used after removing some versions of the driver or to correct problems.
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 current version, such as B or 5.1

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.

Anti-static wrist strap

When you change the printhead cartridge, you need to use an anti-static wrist strap, also called an ESD strap. You can order an anti-static wrist strap, part number 805768-001, from Datacard or obtain one from any electronics store.

Printer components

The ImageCard IV 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 ImageCard IV printer has a replaceable printhead cartridge. The printhead is subject to wear or damage and has a direct impact on print quality. Three printheads are available, as shown in the following table.

Printhead type	Printhead type label	Part number
Full color	Three color (shown)	556062-999
Monochrome	All black	557621-999
Japanese[#]	Three color with “J”	547957-999

#. For Japanese use only.

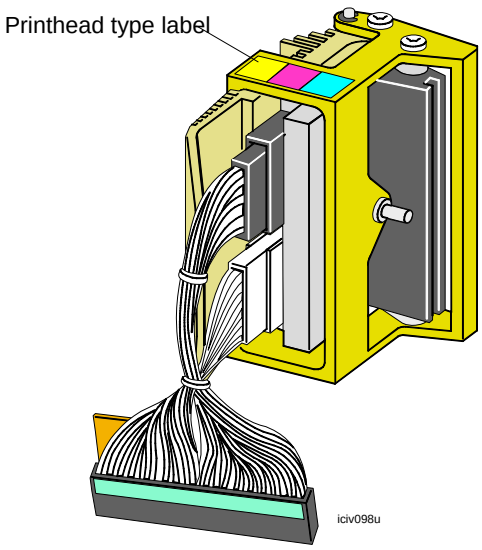


Figure B-4: Replaceable printhead cartridge

⚠ Do not touch the printing edge of the printhead in the printhead cartridge. If you do, use the cleaning pen to clean it.

Print ribbon cartridge

ⓘ Be sure to change the print ribbon setting in the printer driver when you change the type of print ribbon.

Two models of print ribbon cartridge are available. Order the cartridge that matches the one you currently use.

Cartridge material	Part number	Serial number
Metal	556846-001	1094 and lower
Plastic	548626-001[#]	1095 and higher

#. This cartridge is also compatible with printers with lower serial numbers.

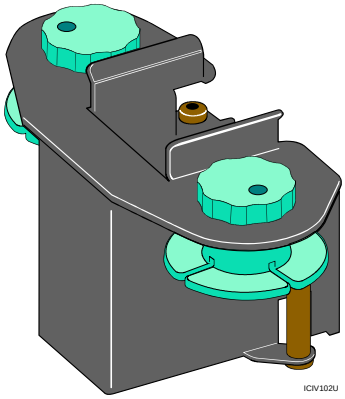


Figure B-5: Print ribbon cartridge, part number 556848-001

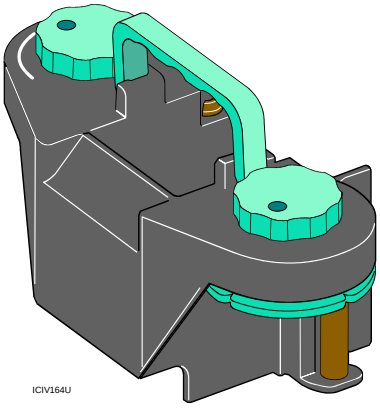


Figure B-6: Print ribbon cartridge, part number 548626-001

Interface cable

The ImageCard IV printer uses an interface cable (part number 806797-001) to connect the port on the printer to the ECP parallel port on the PC.

Figure B-7: Parallel port cable

Power cable

The ImageCard IV printer uses one of the following power cords:

- U.S. power cable (part number 804517-001)

Figure B-8: U.S. power cable

- 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 806913-001)
- Chinese power cable (part number 806842-009)

Smart card cable

If the ImageCard IV printer has one or more smart card modules, it uses a smart card cable to connect the smart card port and the PC.

The smart card serial cable must be a DB9 serial cable, up to 2 feet (1.8 meters) long maximum. The smart card serial cable is part number 805815-004.

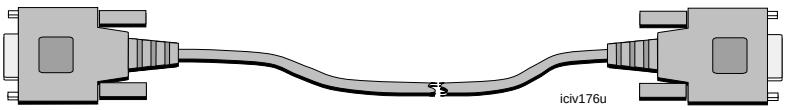
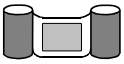


Figure B-9: Smart card serial cable

Overlay cartridge



If your printer has both topcoat and overlay stations, you must have specific cartridges for topcoat and laminate (overlay). The cartridges are not interchangeable.

Three models of overlay cartridge are available. Order the cartridge that matches the one you currently use.

Cartridge lock	Part number	Serial numbers
Metal	557322-003	0992 and lower
Plastic	551215-001	0993 and higher

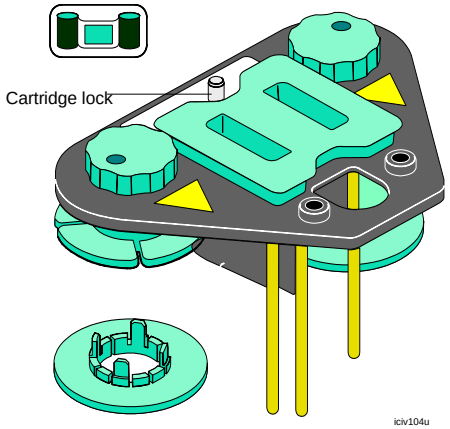


Figure B-10: Overlay cartridge, part number 557322-003

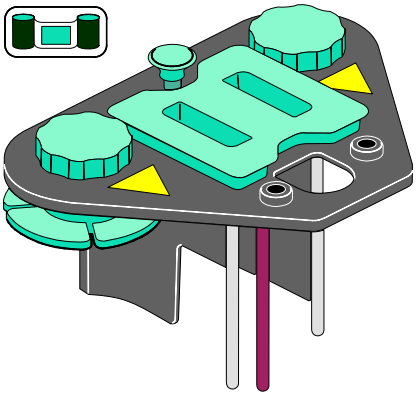


Figure B-11: Overlay cartridge, part number 551215-001

- If your service provider advises you to use an adjustable overlay cartridge, you can order a replacement adjustable overlay cartridge. The part number for the

adjustable overlay cartridge kit is 553402-001. Follow instructions provided with the cartridge to use it.

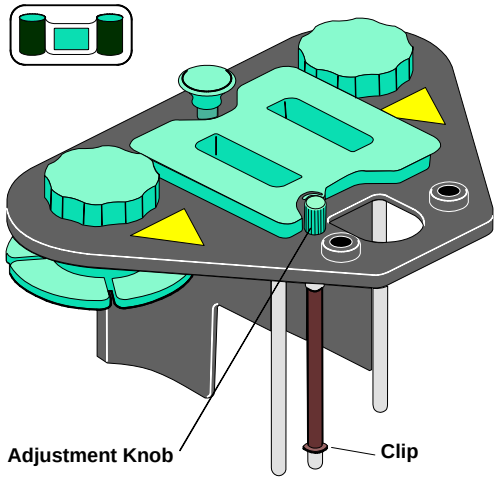


Figure B-12: Adjustable overlay cartridge

Topcoat cartridge

If your printer has both topcoat and overlay stations, you must have specific cartridges for topcoat and laminate (overlay). The cartridges are not interchangeable.

Two models of topcoat cartridge are available. Order the cartridge that matches the one you currently use.

Cartridge lock	Part number	Serial numbers
Metal	557322-004	0992 and lower
Plastic	551215-002	0993 and higher

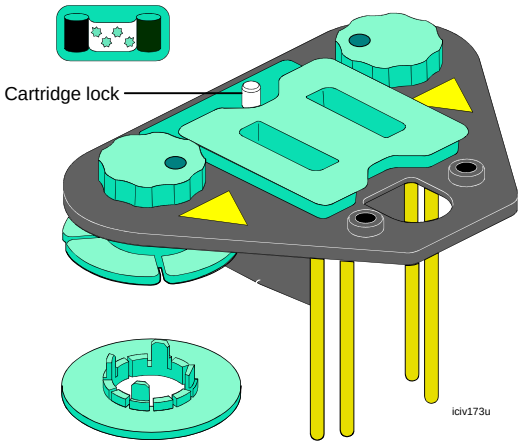


Figure B-13: Topcoat cartridge, part number 557322-004

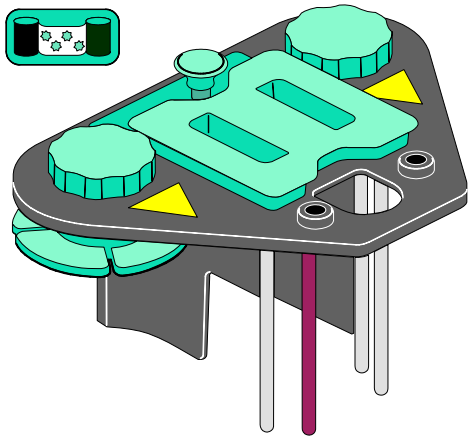


Figure B-14: Topcoat cartridge, part number 551215-002

Spool cap

The spool cap maintains alignment of the supply material in the optional overlay or topcoat cartridge. The spool cap is part number 556900-001.

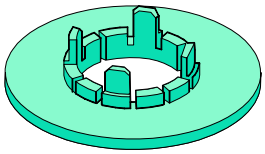


Figure B-15: Spool cap

Optional key

You can purchase a replacement key for a printer with the optional lock. The key is part number 547069-001.

Figure B-16: Key

Tray latching pin

You can purchase a replacement latching pin for the input or output tray. Both trays use the same latching pin. The latching pin is part number 547499-001.

Figure B-17: Tray latching pin

Fuse

The fuse, located in the power receptacle, is part number 804960-017.

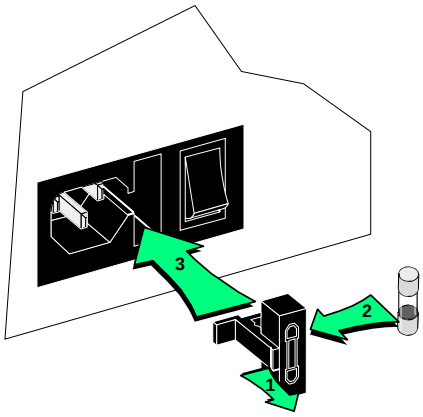


Figure B-18: Power receptacle fuse

The power receptacle fuse is a 2.5 ampere slow blow fuse.

Card input tray

Two card input trays are available, as shown in the following table. Order the cartridge that matches the one you currently use.

Color	Part number	Serial numbers
Green	556842-001	3011 and lower
Gray	547640-001	3012 and higher

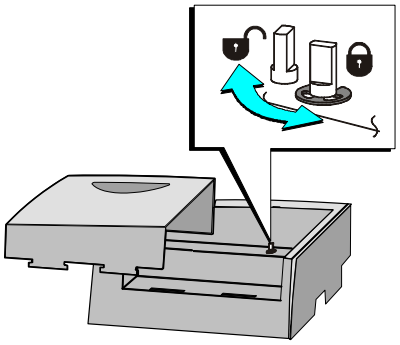


Figure B-19: Card input tray

Do not tip the trays upside down. The latching pins can fall out and the pin is required for the trays to operate properly.

Card output tray

Two card input trays are available, as shown in the following table. Order the cartridge that matches the one you currently use.

Color	Part number	Serial numbers
Green	556843-001	3011 and lower
Gray	547641-001	3012 and higher

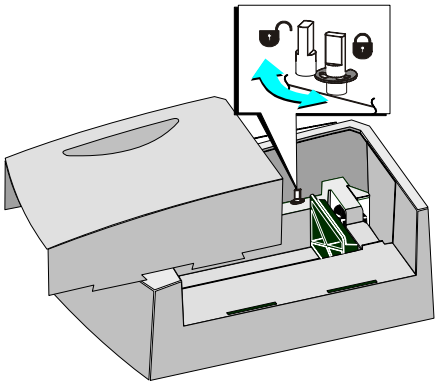


Figure B-20: Card output tray

Cleaning tape cartridge

Two models of cleaning tape cartridge are available. Order the cartridge that matches the one you currently use.

Cartridge lock	Part number	Serial numbers
Turn	556848-001	0992 and lower
Push/pull	548632-999	0993 and higher

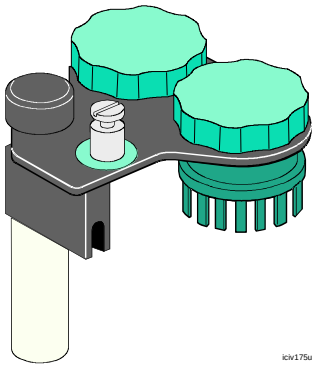


Figure B-21: Cleaning tape cartridge, part number 556848-001

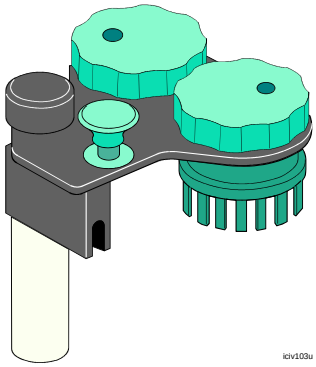


Figure B-22: Cleaning tape cartridge, part number 548632-999

PC port settings

C

This appendix provides information about the PC on which the printer driver for the Datacard® ImageCard® IV photo ID printer is installed. It describes:

- Configuring the ECP parallel port
- Setting port values
- Configuring the optional smart card serial port

This appendix includes a section for settings that are handled the same way in all operating systems and also includes sections for each PC operating system supported by the printer driver.

PC port settings for all operating systems

This section describes how to configure ports.

See the information that accompanies your PC for details about changing the BIOS settings.

Configure the ECP parallel port

For most PCs, the parallel port is configured as an ECP parallel port in the PC's BIOS. The following applies to some PCs and to the Windows 2000, Windows XP, Windows Me, Windows 98, and Windows NT operating systems.

1 Close all open applications.

2 Reboot the PC. Observe the screen for instructions on entering Setup.

3 Enter Setup and follow the instructions that display early in the reboot sequence. The setup screen will appear.

4 In Setup, check to see that the Parallel Port Mode field is set to ECP. If it is not, set it to ECP.

If the PC has more than one parallel port, make sure you check the setting for the parallel port to which the printer is attached (LPT1 or LPT2).

An ECP port is required for the printer to operate at its maximum processing speed. The printer will operate in compatible or IBM AT mode; however, the printer might not operate as fast or communication messages might appear.

5 Save the setting and exit Setup, following the instructions in the Setup screen.

Continue with the “Set port values” procedure for your operating system.

♦

Set up two ECP parallel ports

1 Follow the instructions provided with the port to install it and set the jumpers. Record the jumper settings.

The jumper settings must match the settings you choose in the Resources tab.

2 Right-click on the My Computer icon on the desktop and then choose Properties from the popup menu. The System Properties dialog box appears.

3 Choose the Device Manager tab to view a list of devices. (On Windows 2000 and Windows XP, choose the Hardware tab and then click the Device Manager button.)

4 Choose “View devices by type” if needed.

5 Click the + next to Ports (COM and LPT) to display the port entries. Usually the second installed port is LPT2.

6 Click Printer Port (LPT2), or other entry for the installed port, and then choose the Properties button. The Printer Port (LPT2) Properties dialog box appears.

7 Click the Resources tab.

- Make sure that “Use automatic settings” is not chosen.
- The “Conflicting device list” should show No conflicts.
- If you are using a DMA channel for the second printer, the Resources settings list should show Direct Memory Access and its channel setting.

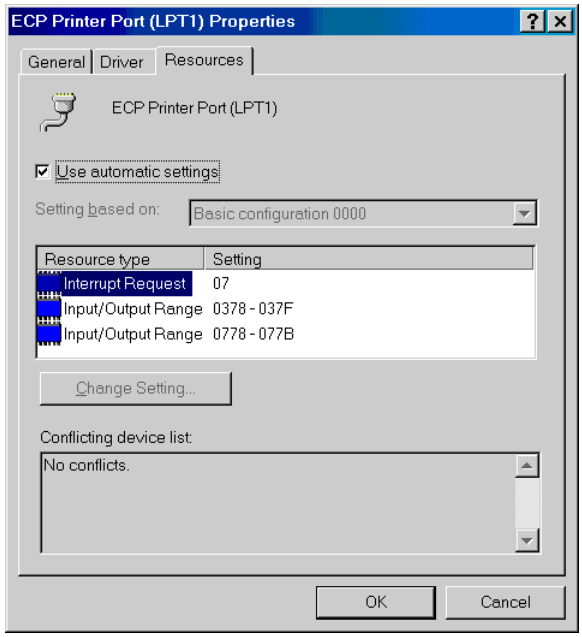


Figure C-1: Printer Port (LPT) Properties dialog box

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

8 Click OK on the Printer Port (LPT2) Properties dialog box and on the System Properties dialog box to save settings and close the dialog boxes.

If you install the second parallel port and receive Windows errors, or if the printer does not print reliably (without displaying errors), the port might have an unresolved hardware conflict. Contact the port manufacturer or the PC manufacturer if you need assistance.

♦

PC settings for Windows 2000, XP & NT 4.0

This section describes the following for PCs running Windows 2000, XP, or NT 4.0.

- Setting parallel port values
- Setting serial port values

Setting parallel port values

Port values include the port to which the printer is assigned, the communication mode for the port, and printer spooling.

Set parallel port values for Windows 2000, XP & NT

1 From the Windows taskbar choose Start, Settings, and then Printers (Printers and Faxes for Windows XP). The Printers (and Faxes) window appears.

2 Highlight the SmartDriver icon by clicking on it once.

3 From the menu bar, choose File and then Properties. The Properties dialog box for the SmartDriver appears.

4 Choose the Ports tab.

5 Make sure the correct port (usually LPT1) is chosen in the Port list. “SmartDriver“ should appear in the Printer column for the checked port.

6 Make sure that "Enable Bidirectional Support" is checked.

Do not choose "Enable Printer Pooling." To set up a printer pool on Windows 2000 or XP, see the *e-Guide for ImageCard IV Printers*.

7 Choose OK to save the settings and close the Properties window.

8 Close the Printers window.

9 On Windows NT, settings are complete. On Windows 2000 and XP, continue with step 10.

10 Right-click on the My Computer icon on the desktop and then choose Properties from the popup menu. The System Properties dialog box appears.

11 Choose the Hardware tab and then click the Device Manager button.

12 Click the + next to Ports (COM and LPT) to display the port entries.

13 Right-click Printer Port (LPT1) (or the entry for the parallel port) and then choose the Properties button. The Printer Port (LPT1) Properties dialog box appears.

14 Click the Port Settings tab.

15 In the Filter Resource Method box, choose "Use any interrupt assigned to the port."

16 Click OK on the Printer Port (LPT1) Properties dialog box and on the System Properties dialog box to save settings and close the dialog boxes.

♦

Setting a smart card serial port—Windows 2000, XP, and NT

For some smart card applications, you connect the PC to the printer's smart card serial port. The PC should be set to match the printer's smart card serial port settings. This section describes how to set the PC serial port in the Windows 2000, Windows XP, or Windows NT 4.0 operating systems.

These settings apply to serial ports for both contact and contactless smart card modules. If you use a contact station with the printer, see the information about the contact station for port settings.

Set the serial port on Windows 2000 and NT

1 From the Control Panel, choose Ports.

2 From the Ports dialog box, choose the port, such as COM1 or COM2.

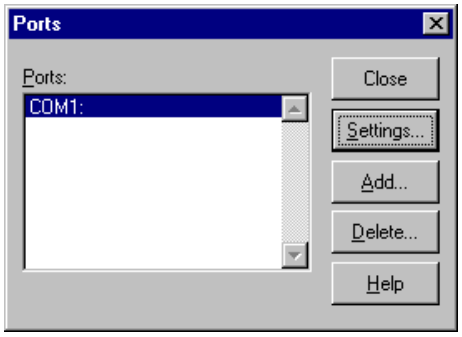


Figure C-2: Ports dialog box

3 Choose 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 smart card module is attached.

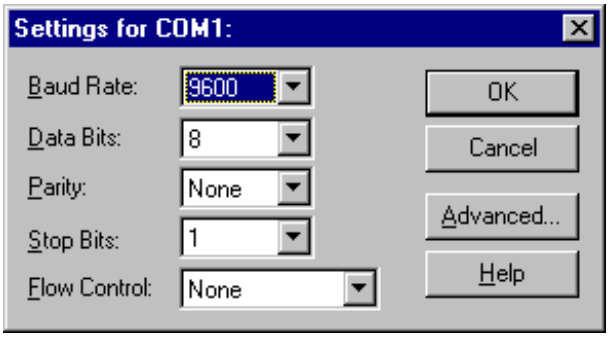


Figure C-3: Settings dialog box

4 Choose 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.

♦

Set the serial port on Windows XP

1 From the Start menu, choose Settings and then Control Panel.

2 From the Control Panel, choose the System icon.

3 Choose the Hardware tab, and then choose the Device Manager button.

4 Press the "+" next to Ports and double click the Communications Port to open the Communications Port Properties dialog box.

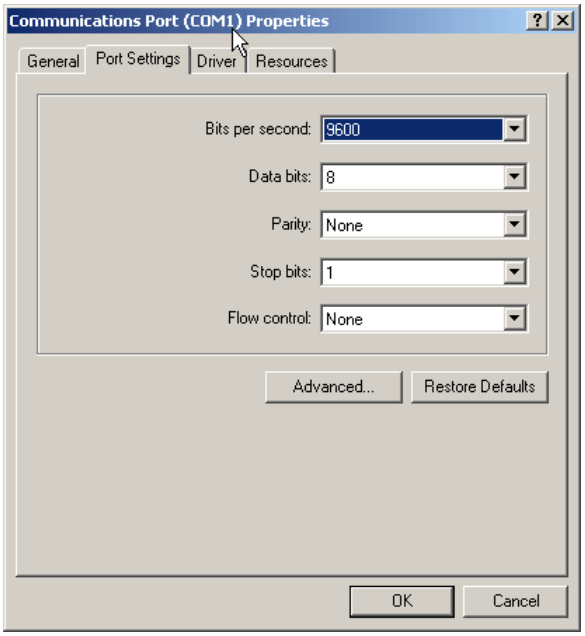


Figure C-4: Communications Port Properties dialog box

5 Choose 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 smart card module is attached.

6 Choose 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.

♦

PC settings for Windows Me and 98

This section describes the following for PCs running Windows Me and 98.

- Setting parallel port values
- Setting serial port values

Setting parallel port values—Windows Me and 98

Parallel port values include the port to which the printer is assigned, the communication mode for the port, and printer spooling.

Verify port assignment and settings

1 From the Windows taskbar choose Start, Settings, and then Printers. The Printers window appears.

2 Highlight the SmartDriver icon by clicking on it once.

3 From the menu bar, choose File and then Properties. The SmartDriver Properties window appears.

4 Choose the Details tab and view the port in the Print to the Following Port list.

Make sure this is the ECP parallel port.

5 Click Spool Settings to display the Spool Settings dialog.

6 Make sure that Enable Bidirectional Support is checked. Also make sure that Spool Print Jobs so Program Finishes Printing Faster is checked.

7 Choose OK to save the settings and close the Spool Settings dialog.

8 Choose OK to save the settings and close the Properties dialog box.

9 Close the Printers window.

♦

Verify the communication mode

1 From the Windows taskbar, choose Start, Settings, and then Control Panel. The Control Panel window appears.

2 Double-click the System icon. The System Properties dialog box appears.

3 Choose the Device Manager tab.

4 Make sure View Devices by Type is chosen.

5 Click the Plus sign + next to Ports (COM & LPT) to show the available ports. The list should include an entry such as "ECP Printer port (LPT1)."

6 Click the entry for the port to which the printer is assigned (such as LPT1 or LPT2).

7 Choose the Properties button to display the Properties dialog box.

8 Choose the Driver tab, and then Choose the Update Driver button to display the Select Device dialog box.

9 Make sure "Show all devices" is chosen.

10 In the Manufacturers list, choose (Standard port types). In the Models list, choose ECP Printer Port, if available.

11 Choose OK or Close on each window to select the choice and close the window. If the Version Conflict dialog box appears, choose Yes to keep the existing version.

12 Choose OK to close the System dialog box and make the changes take effect.

♦

Setting a smart card port for Windows Me & 98

For some smart card applications, you connect the PC to the serial port on the ImageCard IV printer. The PC should be set to match the printer serial port settings. This section describes how to set the PC serial port in the Windows 98 and Windows Me operating systems.

These settings apply to serial ports for both contact and contactless smart card modules. If you use a contact station with the printer, see the information about the contact station for port settings.

Set the serial port on Windows Me & 98

1 From the Start menu, choose Settings and then Control Panel.

2 From the control panel, choose System.

3 On the system Properties dialog box, choose the Device Manager tab.

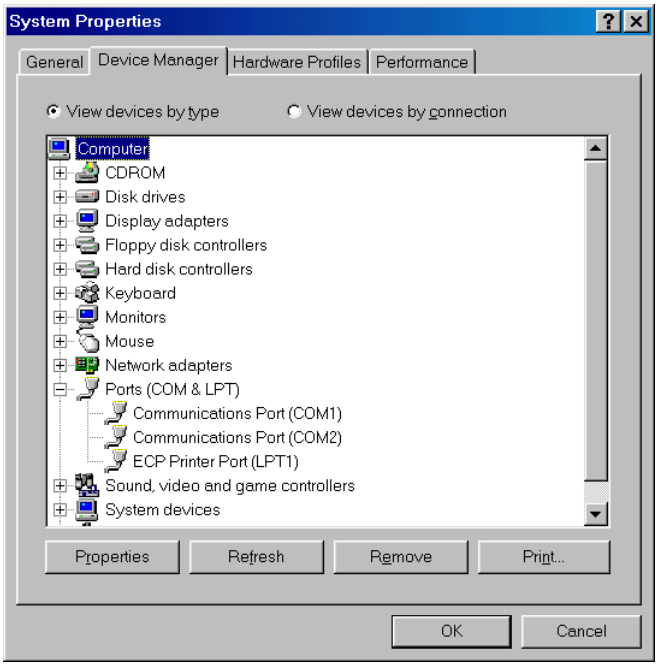


Figure C-5: Device Manager tab of System Properties dialog box

4 Click the Plus sign + next to Ports (COM & LPT) to display a list of ports.

5 From the Ports list, choose the port, such as COM1 or COM2.

6 Choose 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 smart card module is attached.

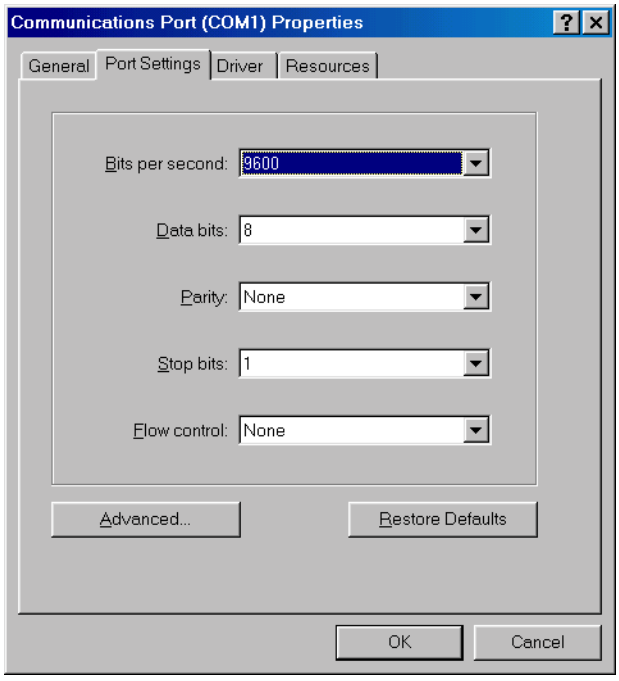


Figure C-6: Settings dialog box

7 Choose the Port Settings tab.

8 Choose 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.

♦

Magnetic stripe encoding

D

This appendix describes the specifications and characters you can encode on a magnetic stripe in the Datacard® ImageCard® IV photo ID printer, including:

- IATA, ABA, and TTS character sets
- NTT character sets

This appendix also describes basic steps required to set up for magnetic stripe encoding.

To use custom magnetic stripe formats (frequently sent as binary data), contact your service provider for more information. To use custom magnetic stripe formats, such as IATA on track 1 and a proprietary format on tracks 2 and 3, your application must use the SmartDriver Software Developer's Kit (SDK). You can obtain the SDK from the SmartDriver CD-ROM or download the SDK from the Datacard Web site at www.datacard.com.

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.
- Determine whether to send coercivity and encoding format data with each card or whether to set values in the printer. If you are using a custom format, you might want to set values in the printer and choose "Use printer settings" in the Properties, Printing Preferences, or Default Document Properties dialog box.
- Determine the coercivity to use. Usually, the coercivity is a system-wide decision: 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, Printing Preferences, or Default Document Properties dialog box.
- Select the encoding format. If a custom format, such as triple-IATA, is used, select "Binary" or “Use Printer Coercivity” in the printer driver.
- Determine the order for encoding 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 side of the card is printed, the magnetic stripe data is encoded, and then the reverse side of the card is printed. 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 front of the printer.

- The following table lists formatting choices available and provides information about setup:

Format	Printer Magnetic stripe Module	Data can be formatted by:	Data is verified by:	Driver format setting	Use Diagnostics ?
IAT	IAT	ID Works	Driver	IAT	No
		Magnetic Stripe Fonts (includes Preface)	Printer	IAT	No
		Escape Codes	Printer	IAT	No
NTT	J (single track)	ID Works	Driver	NTT	Coercivity
		Magnetic Stripe Fonts (includes Preface)	Printer	NTT	Coercivity
Triple IATA	IAT (three-track)	ID Works	Driver	Use printer settings	Yes
		Magnetic Stripe Fonts (includes Preface)	Printer	Use printer settings	Yes
		Some Escape Code formats	Printer	Use printer settings	Yes
Proprietary	IAT (three track)	ID Works	Printer	Use printer settings	Yes
		Magnetic Stripe Fonts	Driver	Use printer settings	Yes
		Custom Application	Application	Use printer settings	Yes
Custom	IAT (three track) J (single track)	Custom Application	Application	Binary or Use printer settings	Optional
		Magnetic Stripe Fonts (includes Preface)	--	Binary or Use printer settings	Optional
Binary	IAT (three track) J (single track)	ID Works	ID Works	Binary	No
		Custom Application	Application	Binary	No

- 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 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 printer. Obtain the guidance of your service provider or VAR when using proprietary formats.
- See the Release Notes file for the operating system you use to identify any limitations that might apply to magnetic stripe encoding.
- 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 ImageCard IV 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 AIT 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.
- For Windows NT, click Document Default Settings. Click the Advanced tab to display Advanced settings.
- If you have the Printer Toolbox open, you can click the Properties (9x), Printing Preferences (2000 and XP), or Default Document Properties (NT) 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, XP, and NT, 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 on page A-3.

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 non-Datacard printer.

IATA, ABA, and TTS character sets

The IAT encoding format selection for the ImageCard IV printer encodes IATA data on track 1, ABA data on track 2, and TTS data on track 3.

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 カ サ タ ナ ハ マ ヤ ラ ワ
イ キ シ チ ニ ヒ ミ リ
ウ ク ス ツ ヌ フ ム ユ ル
エ ケ セ テ ネ ヘ メ レ
オ コ ソ ト ノ ホ モ ヨ ロ ン

and the following 10 Katakana characters:

ヲ ァ ィ ゥ ェ ォ ャ ュ ョ ッ

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 ImageCard IV 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
Start sentinel adjustment	336	336	336	336	336

Related publications

This appendix describes other publications for the ImageCard IV printer.

- User's Guide for ImageCard IV Photo ID Printer, Part Number 539042-001

  This manual provides comprehensive information about using the printer and driver, how to care for the printer, and how to fix problems.

  The information in this guide is supplemented by the online e-Guide and by help for the printer driver.

- e-Guide for ImageCard IV Printer, Part Number 539197-001

  The online e-Guide is delivered as part of the SmartDriver CD-ROM and provides information about how to fix problems. It also provides advanced information, such as how to connect two printers to one PC.

- 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 the ImageCard IV printer. This manual is available only as part of the kit, which is available on the Datacard Web site.

- ImageCard IV Service Information CD-ROM, Part Number 539119-001

  This CD-ROM provides information to Datacard-authorized service providers who maintain or repair the ImageCard IV printer.

- SmartDriver Direct Network Guide, Part Number 539171-001

  This manual is part of the Direct Network Kit (550749-001) and is available on the Datacard Web site.

Laminate material default settings

This appendix describes the default settings to use for different topcoat and laminate materials. Use these values:

- To compare with the settings currently used by the printer
- To setup the option station for a material that is not included in the Material Settings list in the Printer Toolbox

Use the Advanced Setup Laminator -Advanced tab to view the values in the printer.

The default values are based on testing and should be used as starting points. You might need to change these settings to compensate for differences in card stock, supplies, and printers.

Topcoat

The following are default values for topcoat materials that can be used in a topcoat station with a **rubber-coated** heated roller:

Material	Temp	Speed	Pressure
Holographic Topcoat	190	300	1550
Clear Topcoat	190	300	1550

The following are default values for topcoat materials that can be used in a topcoat station with a **metal** heated roller:

Material	Temp	Speed	Pressure
Holographic Topcoat	160	300	1550
Clear Topcoat	160	300	1550

Laminate

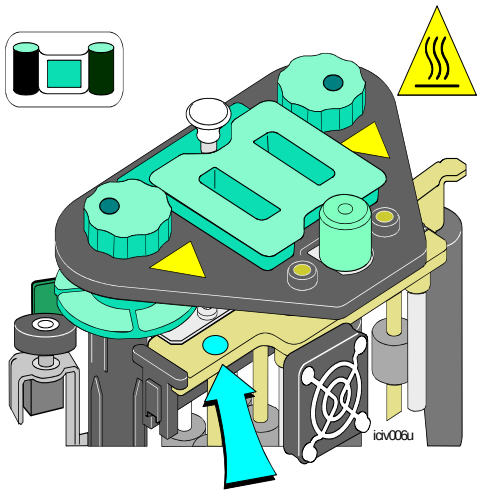
The following are default values for laminate materials that can be used in an overlay station with a rubber-coated roller:

Material	Temp	Speed	Pressure
DuraGard™ 0.5 Mil Clear Laminate	210	200	1550
DuraGard 0.6 Mil Holographic Laminate	210	200	1550

The following are default values for laminate materials that can be used in an overlay station with a metal heated roller:

	Temp	Speed	Pressure
DuraGard 0.5 mil Clear Laminate	180	200	1550
DuraGard 1.0 mil Clear Laminate	200	150	1550
DuraGard 0.6 mil Holographic Laminate	180	200	1550
DuraGard 1.1 mil Holo-graphic Laminate	200	125	1550

The overlay station has a color icon in the location shown if it has a metal heated roller. If the icon is not present, the overlay station has a rubber heated roller.



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