HDP5000 High Definition Card Printer/Encoder User Guide (Rev. 1.5)

Part Number: L000950

HDP5000 High Definition Card Printer/Encoder User Guide (Rev 1.5), property of HID/Fargo Electronics, Incorporated

The revision number for this document will be updated to reflect changes, corrections, updates and enhancements to this document.

Revision Control Number	Date	Document Title
Revision 1.5	MAY 2009	HDP5000 High Definition Card Printer/Encoder User Guide – added YMCKI ribbon support
Revision 1.4	January 2009	HDP5000 High Definition Card Printer/Encoder User Guide

These reference documents were thoroughly reviewed to provide HID Global with professional and international standards, requirements, guidelines and models for our technical, training and user documentation. At all times, the Copyright Protection Notice for each document was adhered to within our HID Global documentation process. This reference to other documents does not imply that HID Global is an ISO-certified company at this time.

ANSI/ISO/ASQ Q9001-2000 American National Standard, (sub-title) Quality Management Systems - Requirements (published by the American Society of Quality, Quality Press, P.O. Box 3005, Milwaukee, Wisconsin 53201-3005)

The ASQ ISO 9000:2000 Handbook (editors, Charles A. Cianfrani, Joseph J. Tsiakals and John E. West; Second Edition; published by the American Society of Quality, Quality Press, 600 N. Plankinton Avenue, Milwaukee, Wisconsin 53203)

Juran's Quality Handbook (editors, Joseph M. Juran and A. Blanton Godfrey; Fifth Edition, McGraw-Hill)

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HDP5000 Process Flow (in table format)

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Step	Process
1	The Card feed stepper turns ON (to check for a card in the card path).
2	The Lam Headlift turns until the head up position is returned from the Headlift Sensor).
3	The Film transfer take-up Motor turns ON to take up any slack in the film.
4	The Print Headlift turns until head up position is returned from Headlift Sensor.
5	The Print Ribbon moves forward until it finds the yellow panel, pauses, advances to magenta, then backs up to yellow (the Ribbon Sensor detects the color of the ribbon).
6	The Transfer Film advances forward two panels from supply (advances until the Print Film Sensor senses 2 marks on the Film).
7	The Transfer Film advances forward one panel from supply (advances until the Print Film Sensor senses 1 mark on the Film).
8	The Transfer Film reverses for one panel onto supply (reverses until the Print Film Sensor senses 1 mark on the Film).
9	The Transfer Film reverses for one panel onto supply (reverses until the Print Film Sensor senses 1 mark on the Film).

Reviewing the HDP5000 Sequence of Operations

The following sequence describes a dual-sided, full color print job with magnetic encoding.

Step	Process
1	The File information is received from the PC.
2	The Heater warms up and/or maintains the heat on the hot Roller using the RTD (Resistive Thermal Device) to help maintain the desired temp.
3	The DC Motor and Stepper Motor turn ON and run until a card is seen by the card Sensor, which will cause the Card Input Motor to stop. The Stepper will continue to run a certain number of steps to position the card under the Card Feed/Position Sensor.
4	For a magnetic print job, the Stepper will continue moving the card until the trailing edge is positioned under the Mag Head. All stop.
5	Stepper will turn ON in reverse direction and encode card. All stop.
6	Stepper will again turn on and position the trailing edge of the card under the Mag Head. All stop.
7	Stepper will turn ON in reverse direction and verify data encoded onto mag stripe.
8	Stepper continues transporting card until the trailing edge is positioned under the Card Feed/Position Sensor. All stop.
9	The Ribbon Drives turn ON and move until the correct panel is found by the Print Ribbon Sensor. All stop. (**Note:** The Print Ribbon Encoder is active during this step.) This step occurs simultaneously with Step 10 (below).
10	The Film Drives turn ON until the Film is positioned with the Film Print Alignment Sensor. (**Note:** This is the closest Sensor to the Print Platen Roller.) All stop. (**Note:** The Film Ribbon Encoder is active during this step.)
11	The Headlift Motor engages, moving the Printhead down until Headlift Sensor is activated. All stop.
12	The Fan turns ON as required to keep head cool.

13	The Ribbon Drives, Film Drive and Print Platen Stepper turn ON and the Printhead burns the image data until the image data is depleted. All stop. (**Note:** The Ribbon Encoders and Film Encoders are active during this step.)
14	The Headlift Motor engages, moving the Printhead up until the Headlift Sensor is activated. All stop. The Film Drive reverses the Film Position Sensor to print over the image (again).
15	Repeat Steps 9 to 14 for the appropriate number of color/heat seal panels.
16	The Film Drives turn ON to rewind the printed portion of the Film into position at the heated Transfer Roller using the Lamination Film Alignment Sensor.
17	If the heater is not at the required temperature yet, the job will pause.
18	Stepper engages to move the card to a position directly over the Transfer Roller. The Card Feed/Position Sensor determines card edge and number of steps to position card. All stop.
19	The Headlift Motor turns ON to raise the Transfer Roller and will stop when the Headlift Sensor is activated. All stop.
20	The Stepper and Film Drive engage to laminate the printed Film onto the card. They will turn off after a given number of steps based on the position given by the card Sensor. All stop. (**Note:** The Film Encoder is active during this step.)
21	The Headlift Motor turns ON to lower the Transfer Roller, stopping when the Headlift Sensor is activated.
22	The Film Drive and Stepper turn ON for a given number of clicks based on Film Encoder, until the film is released.
23	The Stepper turns ON to move the card into Flipper Module to flip the card to the opposite side. After flipping the card is transported back to the Card Feed/Position Sensor to repeat Steps 9 to 14. Upon completion of print all print cycles the card is transported to the Output Hopper (based on steps from a known from Flipper Card Position Sensor). All stop.
24	The Heater is maintained at a set temperature by the RTD when the Printer is ON. The cooling fan is ON when the Printhead is ON or hot.

Reviewing the Lamination Module Boot-up Sequence

Step	Process
1	The Lam Headlift turns until the head up position is returned from Headlift Sensor.
2	The Lamination Ribbon Motor activates. (**Note:** The RFID determine the presence of a roll of lamination.)
3	The Card Sensor checks for the presence of a card and ejects it if found.

Reviewing the Lamination Module Sequence of Operations

The LAM sequence of operations begins after printing has occurred with the Card Printer.

Step	Process
1	The card is fed onto the Lamination Module.
2	The card is fed to the Card Position Sensor.
3	The Lamination Take-up Motor begins cycling until the Lamination Sensor detects the mark.
4	The Card Feed Motor activates to place the leading edge of the card on the Lam Roller.
5	The Lam Roller Lift Motor cycles until the Transfer Roller Lift Sensor detects the roller is down.
6	The Card Feed Motor and the Lamination Drive Motor activate for the length of the card.
7	The Lam Roller Lift Motor cycles until the Lam Roller Lift Sensor detects the roller is up.

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Specifications

The purpose of this section is to provide the User with specific information on the Regulatory Compliances, Agency Listings, Technical Specifications and Functional Specifications for the HDP5000 and HDP5000-LC Printers.

Safety Messages (review carefully)

Symbol	Critical Instructions for Safety purposes
Danger: 	**Failure to follow these installation guidelines can result in death or serious injury.** Information that raises potential safety issues is indicated by a warning symbol (as shown to the left). • **To prevent personal injury**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent personal injury**, always remove the power cord prior to performing repair procedures, unless otherwise specified.
Caution: 	**This device is electrostatically sensitive**. **It may be damaged if exposed to static electricity discharges.** Information that raises potential electrostatic safety issues is indicated by a warning symbol (as shown to the left). • **To prevent equipment or media damage**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent equipment or media damage**, observe all established Electrostatic Discharge (ESD) procedures while handling cables in or near the Circuit Board and Printhead Assemblies. • **To prevent equipment or media damage**, always wear an appropriate personal grounding device (e.g., a high quality wrist strap grounded to avoid potential damage). • **To prevent equipment or media damage**, always remove the Ribbon and Cards from the Printer before making any repairs, unless otherwise specified. • **To prevent equipment or media damage**, take jewelry off of fingers and hands, as well as thoroughly clean hands to remove oil and debris before working on the Printer.

Regulatory Compliances

Term	Description
CSA (cUL)	The Printer manufacturer has been authorized by UL to represent the Card Printer as CSA Certified under CSA Standard C22.2 No. 60950-1-03. **File Number:** E145118
FCC	The Card Printer complies with the requirements in Part 15 of the FCC rules for a Class A digital device.
UL	The Card Printer is listed under UL IEC 60950-1 (2001) INFORMATION TECHNOLOGY EQUIPMENT. (**Note:** This product is intended to be supplied by a Listed Power Unit marked "Class 2" and rated for 24 V dc, 3.75 to 5 A.) **File Number:** E145118

Agency Listings

Term	Description
Emissions Standards	CE, FCC, CRC c1374, EN 55022 Class A, FCC Class A, EN 55024: 1998, EN 61000-3-2 and EN 61000-3-3.
Safety Standards	UL IEC 60950-1 (2001), CSA C22.2 No. 60950-1-03.

FCC Rules

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

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

Reference Safety Messages in this document.

Environmental Protection (China-RoHS)

Environmental Protection Use Period is based on the product being used in an office environment.

Traditional Chinese RF Emissions and Safety Statements

传统中文 射频放射及安全指令

安全信息 (小心检查)

标记	重要的安全事项说明安全
危险: 	未按照说明安装可能造成人员伤亡。 在可能产生潜在安全问题的地方有警示标记。(如左图所示)。 为了防范人员伤害，使用此警示标记的操作前，参考安全信息提示。 为了防范人员伤害，在没有特别说明的情况下，维护前关掉电源开关。
小心: 	此设备对静电很敏感。如果受到静电放电，设备会被损害。 在可能产生潜在静电安全问题的地方有警示标记。(如左图所示)。 为了防范损害设备，使用此警示标记的操作前，参考安全信息提示。 为了防范损害设备，在集成电路板和打印头联合装置表面或附近的电缆时，请注意观察所有的静电放电设备。 为了防范损害设备，配备既然合适的接地装置 (比如：手腕上带一个高质量的接地皮带以免受到可能的伤害)。 为了防范损害设备，如果没有特殊说明，在做任何维护前，请取下打印机上的色带和卡。 为了防范损害设备，在使用打印机之前，请摘下戒指和手上饰品，仔细清洗手上的油脂。

Technical Specifications

Term	Description
Accepted Card Thickness	• **Print only:** .030" (30 mil) to .050" (50 mil) / .762mm to 1.27mm • **Print/Lamination:** .030" (30 mil) to .040" (40 mil) / .762mm to 1.02mm
Accepted Electronic Card types	HID Proximity Cards, Mifare Contactless Smart Cards and Contact Smart Cards, iClass
Accepted Card Types (Compositions)	ABS, PVC, PET, PETG, Proximity Cards, Contact Smart Cards, Magnetic Stripe cards and Optical Memory Cards
Card Cleaning	Replaceable cleaning roller (included with each print Ribbon)
Colors	Up to 16.7 million colors and 256 shades per Pixel.
Input Card Cartridge Capacity	**HDP5000 and HDP5000-LC:** 100 cards (.030in./.762mm) Has refillable Card Cartridge that can either be attached to the Printer or detached for storage. This allows single feed with the Card Cartridge removed or with no other cards in the Card Cartridge
Output Hopper Card Capacity	**HDP5000 and HDP5000-LC:** 200 card Output Hopper capacity (.030" / .762mm) Includes Reject Hopper capability when connected to the Flipper Module with available storage on the Output Tray or the Lamination Module
Card Sizes (Accepted Standard sizes)	**HDP5000 and HDP5000- CR-80:** This selection is the default form size for the HDP5000. This will print a 3.370 in. L x 2.125 in. W (85.6mm L x 54mm W) image including a .04 over-bleed on each of the 4 sides. • **CR-80 (default values):** Card Size supported is 2.204 X 3.452 (56 X 87.7 mm). Standard Card Size in inches (HDP5000 Printer Driver > Card tab)

	 Standard Card Size in mm (HDP5000 Printer Driver > Card tab) 
Card Size (Custom selection)	Sets Custom Card Size when closing dialog box. • Print Width default = 2.440, upper limit = 2.440, lower limit = 1.000, cannot be null • Print Length default = 3.704, upper limit = 3.704, lower limit = 3.000, cannot be null Changing back to CR-80 resets to CR-80 defaults. Custom Card Size in inches (HDP5000 Printer Driver > Card tab)  Custom Card Size in mm (HDP5000 Printer Driver > Card tab) 
Card Size (inches and mm)	Choice of inches or mm changes the counter choice on the K Panel Resin tab. See below. • Inches displays card size in inches. • mm displays card size in mm. Changing Print Width or Print Length dimensions automatically changes drop down to Custom.

	
Colors (dpi)	300 dpi (11.8 dots/mm)
Dimensions	• **HDP5000:** 11.50"H x 12.25"W x 9.25"D / 292mmH x 313mmW x 235mmD • **HDP5000 + Dual-Sided Module:** 11.50"H x 17.50"W x 9.25"D / 292mmH x 445mmW x 235mmD • **HDP5000 + Single-Sided Lam Module:** 12.75"H x 25"W x 9.25"D / 324mmH x 635mmW x 235mmD • **HDP5000 + Dual-Sided Module + Dual-Sided Lam Module:** 12.75"H x 30"W x 9.25"D / 324mmH x 762mmW x 235mmD • **Lam Module:** 12.75"H x 12.25"W x 9.25"D / 324mmH x 313mmW x 235mmD
Display	User-friendly, SmartScreen™ LCD Control Panel
Encoding Options (only HDP5000 and HDP5000-LC)	• ISO Magnetic Stripe Encoding Module, dual high- and low-coercivity, Tracks 1, 2 and 3 • JIS II Magnetic Stripe Encoding Module • Raw Binary Encoding format • E-card Docking Station (required for all e-card options or 3rd party smart card encoding) • Contact Smart Card Encoder (ISO 7816), Parts 1-4; T=0 and T=1 • Contactless Smart Card Encoder (Mifare®) • Prox Card Encoder (HID read-only) (**Note:** Corporate Express 1000 Cards can be used with special order Weigand/ASCII Converter) • iCLASS™

Fargo Certified Supplies	Fargo Card Printer/Encoder requires highly specialized media to function properly. To maximize printed card quality and durability, Printhead life and Printer/Encoder reliability, use only Fargo Certified Supplies, Fargo warranties are void, where not prohibited by law, when non-Fargo Certified Supplies are used.
HDP Film Options	• Clear, 1,500 prints • Standard Holographic (500 prints) (only HDP5000 and HDP5000-LC) • Custom Holographic, special order (500 prints) (only HDP5000 and HDP5000-LC)
HDP Film Storage Temperature	77ºF (25ºC) or lower for no longer than 1.5 years.
Humidity	20% to 80% (non-condensing)
Input Hopper Card Capacity	**HDP5000 and HDP5000-LC:** • 100 cards (.030/.762mm)
Interface	• USB 2.0 (high speed) and Ethernet with internal print server • Interfacing information for E-card Options
Maximum Accepted Card Width	2.125W / 54mmW
Maximum Accepted Card Length	3.375L / 85.6mmL

Memory	16MB RAM
Operating Temperature	65º F to 90º F (18º C to 32º C).
Options	• Card Lamination Module – single-sided or double sided • Magnetic stripe encoding dual-sided (simultaneous) • 200-card input hopper • Smart card encoding (contact/contactless) • Dual-sided printing • Door and cartridge locks • Printer cleaning kit
Output Hopper Card Capacity	**HDP5000/HDP5000-LC** • 200 cards (.030mm)
Overlaminate Options (HDP5000-LC and HDP5000 only)	All overlaminates are available in either clear, holographic globe design or custom holographic design. They can also be optimized for use with smart cards and Magnetic Stripes. Here are the options: • Thermal Transfer Overlaminate, .25 mil thick, 500 prints • PolyGuard® Overlaminate, 1.0 mil and .6 mil thick, 250 prints (PolyGuard available in a CR-80 patch size)
Power Supply	• 80W for HDP5000 • 160W (two 80W bricks) for the HDP5000-LC (**Note:** This product is intended to be supplied by a Listed Power Unit marked "Class 2" and rated for 24 V dc, 3.75 to 5 A.)
Print Area	Over-the-edge on CR-80 cards.
Printing Method	HDP™ Dye-Sublimation / Resin Thermal Transfer

Print Ribbon Options	**HDP5000 and HDP5000-LC (prints or images):** • Full color, **YMC***, 750 prints • Full color with resin black, **YMCK***, 500 prints • Full color with two resin black Panels, **YMCKK***, 500 prints • Full color YMC with resin black and heat seal panel for difficult-to-print surfaces, **YMCKH***, 500 prints • Full color YMC with resin black and UV fluorescing panel, **YMCFK***, 500 prints • Full color YMC with resin black and Inhibitor panel, **YMCKI***, 500 prints • Premium Black Resin **(K)** 3000 prints *Indicates the Ribbon type and the number of Ribbon panels printed where Y=Yellow, M=Magenta, C=Cyan, K=Resin Black, H=Heat Seal and F=Fluorescing
Print Speed-Batch Mode	**HDP5000 and HDP5000-LC (see note below):** • 30 seconds per card / 95 cards per hour (YMC with transfer) • 35 seconds per card / 78 cards per hour (YMCK with transfer)F • 50 seconds per card / 51 cards per hour (YMCKK with transfer)* • 70 seconds per card / 51 cards per hour (YMCFK with transfer)* • 50 seconds per card / 72 cards per hour (YMCK with transfer and dual-sided, simultaneous lamination)* • 75 seconds per card / 48 cards per hour (YMCKK with transfer and dual-sided, simultaneous lamination)* • 70 seconds per card / 48 cards per hour (YMCKI with transfer) • 17.5 seconds per card/ cards per hour (K with transfer) • Print speed indicates an approximate print speed and is measured from the time a card feeds into the Printer to the time it ejects from the Printer. • Print speeds do not include encoding time or the time needed for the PC to process the image. • Process time is dependent on the size of the file, the CPU, amount of RAM and the amount of available resources at the time of the print.

Resolution	300 dpi (11.8 dots/mm)
Single Wire USB 2.0 Encoding Options	• ISO Magnetic Stripe Encoding, dual high- and low-coercivity, Tracks 1, 2 and 3 • Contactless Smart Card Encoder (HID iClass and MIFARE) • Contact Smart Card Encoder reads from and writes to all ISO7816-1/2/3/4 memory and microprocessor smart cards (T=0, T=1) as well as synchronous cards • Prox Card Reader (HID read-only)
Software Drivers	Windows 2000, Windows XP, Windows 2003, Vista (32 bit only), (MAC OSX & Linux Driver and User Guide on www.fargosupport.com) Optional Drivers available on www.fargosupport.com • 32-bit unidirectional and non-diagnostic Linux (does not support the F-panel option) o Ubuntu 7.10 o Fedora Core 7 o Fedora Core 8 o Red Hat Enterprise 5 o OpenSuse 10.3 o OpenSuse 9 • MAC (ColorSync Color Profiling certified) (does not support the F-panel option) o 10.4 o 10.5
Supply Frequency	50 Hz / 60 Hz
Supply Voltage	100-240 VAC, 3.8A (HDP5000 and HDP5000-LC)
Supported Printers/Models	HDP5000 & HDP5000 with Card Lamination Module: • Ethernet • USB

System Requirements	• x86 based PC or compatible

	• Windows 2000, Windows XP, Windows 2003, Vista (32 bit only) • 500MHz computer with 256MB of RAM or higher • 500MB free hard disk space or higher
Warranty	**Printer:** Two year (including On-Call Express, U.S. only); optional Extended Warranty Program (U.S. only); see below for more detail. • Two (2) Year Factory Warranty • Covers parts and depot repair • First year On-Call-Express (loaner printer) • 2nd year On-Call-Express available for a fee. This must be purchased before the first year On-Call-Express expires. • Extended Warranties available **Printhead:** Lifetime; unlimited pass with Fargo-certified Cards
Weight	• **HDP5000:** 16 lbs. / 7.3 kg • **HDP5000 + Dual-Sided Module:** 22 lbs. / 10 kg • **HDP5000 + Single-Sided Lam Module:** 28 lbs. / 12.7 kg • **HDP5000 + Dual-Sided Module + Dual-Sided Lam Module:** 36 lbs. / 16.4 kg

Functional Specifications

The Card Printer utilizes two different, yet closely related printing technologies to achieve its remarkable print quality for dye-sublimation and resin thermal transfer.

The following describes how each of these technologies works:

Function	Description
Dye-Sublimation	Dye-Sublimation is the print method the Card Printer uses to produce smooth, continuous-tone images that look photographic. (**Note:** This process uses a dye-based Ribbon roll that is partitioned by a number of consecutive color Panels.) **Process colors:** The Panels are grouped in a repeating Series of three process colors - yellow, magenta and cyan (YMC), along the entire length of the Print Ribbon. **Panels:** The Printer always prints the yellow Panel first, followed by the magenta Panel and the cyan Panel. **Printhead:** As the Print Ribbon passes beneath the Printhead, hundreds of thermal elements within the Printhead heat the dyes on the Ribbon. (**Note:** When these dyes are heated, they vaporize and diffuse into the surface of the film and then the film is laminated onto the card surface. A separate pass is made for each of the three color Panels on the Ribbon.) **Color Shades:** By combining the colors of each Panel and by varying the heat used to transfer these colors, it is possible to print up to 16.7 million different shades of color. (**Note:** This blends one color smoothly into the next, producing photo-quality images with absolutely no dot pattern.) **Dye-Diffusion Thermal Transfer:** It is the process of heating a dye suspended in a cellulous substrate until the dye can flow, diffusing into the dye receptive surface of the card or InTM. This produces the image in the surface of the card. **Inhibit Panel:** The Inhibit or **I** designation under YMCKI indicates the ability to prevent the transfer of film to the card surface. Users can select these Ribbon types to prevent film from transferring over security features, signature panel or other areas of special interest on the card surface **Fluorescing Panel:** The fluorescing panel **(F)** will allow you to print a standard or one-to-one personalized grayscale fluorescing image that is completely invisible until exposed to ultraviolet light.

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Printer Components: Resin Thermal Transfer to USB Interface Port

Component	Description
Resin Thermal Transfer	Resin Thermal Transfer is the print method the Printer uses to print sharp black text and crisp bar codes that can be read by both infrared and visible-light bar code scanners. Like dye-sublimation, this process uses the same thermal Printhead to transfer color to a film from a resin-only Print Ribbon or the resin black (K) Panel of a full color Print Ribbon. The difference, however, is that solid dots of resin-based ink are transferred and fused to the surface of the film and then the film is laminated onto the card surface. (**Note:** This produces very durable, saturated printing.)
Card Cartridge	Load blank cards into this Cartridge.
Card Output Hopper	Stores 200 cards.
Card Lamination Module	Works in conjunction with the Printer to apply a variety of different overlaminates to printed cards, providing increased card durability and security. (**Note:** When printing a batch of cards, the Printer can be encoding and printing one card while the Lamination Module laminates another card.)
LCD Display	Displays the current status of the Printer.
Printhead	The component of the Printer that actually does the printing. This component is fragile and must not be bumped or touched with anything other than a cleaning pen.
Softkey Buttons	Current function is displayed above the button and will change depending upon the Printer's mode of operation.
Card Cleaning Roller	Automatically cleans cards for higher print quality. (**Note:** Replace this Roller after every 1000+ cards or as needed.)
Power Port	Connect to the included power supply.
USB Interface Port	Connect to the Windows PC USB cable, LAN Connector.

Printer Components: LCD and Softkey Control Pad

The Printer provides a two line, thirty-two (32) characters LCD Display that can communicate helpful information about the Printer's operation. The bottom line of the LCD Display will always be used to communicate the current function of the Printer's softkey buttons.

This section describes how the LCD Display and Softkey Control Pad work together.

Component	Description
Softkey Buttons	The Printer has two **softkey buttons** that appear below the LCD Display. Their current function is indicated by the words appearing above them. This function will change according to the Printer's current mode of operation. • Press the corresponding softkey button under the choice you want to select. If no word appears above a particular button, this indicates it has no function in that particular mode of operation.
LCD Display	The Printer's LCD Display will change according to the Printer's current mode of operation.
Ready / Printer Open Screens	Once the Printer has finished its system check and with the Printer closed, the Printer will display Printer Ready to indicate that the Printer is ready for operation. (**Note:** The Printer will stay in this mode until it receives a print job or it is turned OFF.) • If the Printer is opened, the Cover is Open screen will appear. Press either the **Forward** or **Back** buttons to move the Printer's card path Rollers in the indicated direction. (**Note:** This is helpful when cleaning the Printer or if clearing jammed media.) • All rollers will move even if the Lam cover is not opened.
Component	**Description**
Print Status Screen	During operation, the LCD will indicate the current Print Status by showing you the area of the Printer that is active. It does this by displaying the following messages: • **FEEDING:** Indicates that cards are being fed into the Printer. • **FLIPPING:** Indicates that the card is being transported to the Flipper Module. • **ENCODING:** Indicates the encode station is encoding a card (appears only if you are using a Printer with an optional built-in Encoding Module). • **PRINTING:** Indicates the Printer is printing onto the HDP film. • **RECIEVING DATA:** Indicates that the Printer is receiving data from the PC.

	• **TRANSFERRING:** Indicates the Printer is transferring an image to a blank card. • **LAM:** Indicates the Lamination Station is applying an overlaminate to a card (appears only if using a Printer equipped with the optional Card Lamination Module. The Print Status screen always displays **Cancel** in the lower left and **Pause** in the lower right.
The **Cancel** button	Use this button to cancel print jobs and reset the Printer for the next print job. **Cancel** now has two options: • Cancel single job in memory. • Cancel all jobs in memory. This **Cancel All** function will cancel all print jobs in the Printer and will completely reset the Printer. In this case, be sure to cancel the print jobs from the PC before pressing **YES**.
The **Pause** button	Use this button to pause the Printer at any time during operation. Note the Printer will always finish its current task before pausing. When the Printer is paused, the **Pause** softkey button will change to **Resume**. Press **Resume** continuing Printer operation.

Printer Components: Print Ribbons

The Card Printer utilizes both dye-sublimation and/or resin thermal transfer methods to print images (print to film and transfer film to card). Since the dye-sublimation and the resin thermal transfer print methods each provide their own unique benefits, Print Ribbons are available in dye-sublimation-only and combination dye-sublimation/resin versions.

To make it easier to remember which Print Ribbons are which, a letter code has been developed to indicate the type of Ribbon Panels found on each Ribbon.

This letter code is as follows:

= Dye-Sublimation Yellow Panel

= Dye-Sublimation Magenta Panel

= Dye-Sublimation Cyan Panel

= Resin Black Panel

= Heat Seal Panel

= Dye-Sublimation Fluorescent Panel


= Inhibit Panel

Printer Components: Blank Cards

 **Caution:** Never run cards with a contaminated, dull or uneven surface through the Printer. Printing onto such cards will ultimately lead to poor print quality. Always store the card stock in its original packaging or in a clean, dust-free container. Do not print onto cards that have been dropped or soiled.

Type	Description
Card Size	These Card Printers accept standard CR80 sized cards (3.375L x 2.125W / 85.6mmL x 54mmW) with a thickness of 30 mil to 50 mil (.030/.762mm).
Card Design	The Printer will print onto any card with a clean, level and polished PVC surface. (**Important:** Composite PVC is recommended over straight PVC for the best results and for ISO card specification compliance. Single-side straight PVC does not conform to ISO compliance at this time.) The Printer will print onto any card with a clean, level and polished PVC surface.
Card Surface	Suitable cards must have a polished PVC surface free of fingerprints, dust or any other types of embedded contaminants. In addition, cards must have a completely smooth, level surface in order for the Printer to achieve consistent color Coverage. Some types of Proximity cards, for example, have an uneven surface which will inhibit consistent color transfer. Likewise, some smart card chips are raised slightly above the cards surface, which also results in poor color transfer.
UltraCard stock	Due to the importance of using high-quality blank cards, a factory-approved card stock called UltraCard™ is available and recommended for best results. UltraCard stock has a glossy PVC laminate on top and bottom and is optically inspected to provide the cleanest, most scratch and debris-reduced cards possible. Two types of these cards are available: UltraCard and UltraCard Premium III. UltraCard stock has a PVC core and offers medium card durability. **Recommended:** UltraCard Premium III stock has a 40% polyester core and offers high durability. Both types of UltraCards produce printed images with a glossy, photo-quality finish.

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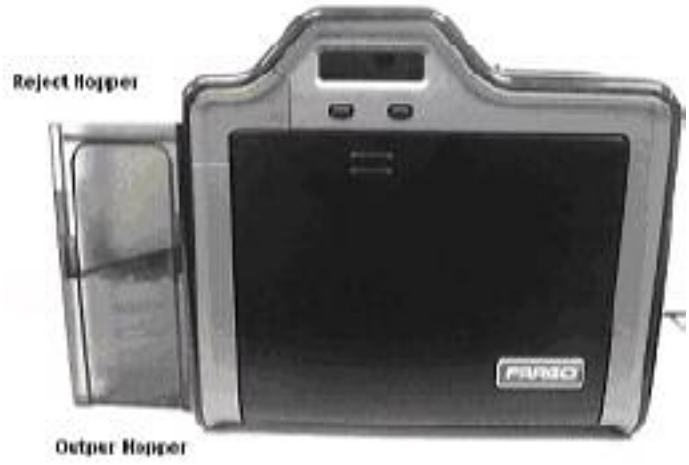
Printer Components: Card Input and Output Hoppers

Type	Description
Card Cartridge	The Card Cartridge will hold a maximum of 100 cards (based on a standard 30 mil card thickness).

Printer Components: Card Output Hopper and Reject Hopper

Type	Description
Card Output Hopper	**HDP5000/HDP5000-LC:** All standard HDP Card Printers provide a 200 card capacity Card Output Hopper (based on a standard 30 mil card thickness). (**Note:** This Hopper stores the cards after they are printed.) Shown in the lower left. Reject hopper functionality when connected to the Flipper Module. The storage is available on the output tray or the Lamination Module.
Reject Hopper	Shown in the upper left of the image below.



Printer Components: Transfer Roller

 **Danger:** The Printer's Transfer Roller can reach temperatures exceeding 350 degree F (175 C). Use extreme caution when operating the Transfer Roller. Never touch the Transfer Roller unless the Printer Power has been turned off for at least 20 to 30 minutes.

Type	Description
Controls	Both the Printer itself and the Printer's software Driver control the built-in Transfer Roller.
Temperature Adjustment	To change the temperature of the Transfer Roller, adjust its temperature through the Image Transfer Tab within the Printer Driver setup window. Once adjusted, the new temperature settings will be sent down with the next print job along with the rest of the Printer Driver information.
New Temperature Setting	Before printing begins, the Transfer Roller will automatically adjust itself to the new temperature setting. (**Note:** This new temperature setting will remain programmed within the Printer until it is once again changed within the Printer Driver or until the Printer is turned OFF.) Whenever the Printer is turned OFF, the Transfer Roller will automatically reset itself and return to its default temperature the next time the Printer is turned ON. Disconnect the Printer's power supply. (**Technician Note:** Cycling the Printer's power supply serves to reset the Transfer Roller to its default temperature. The temperature setting within the Printer Driver, however, will stay the same until it is changed.)

Reviewing the Overlaminates

Important! Fargo Card Printers require highly specialized overlaminates to function properly. To maximize Printer life, reliability, printed card quality and durability, you must use only Fargo Certified Supplies. For this reason, the Fargo warranty is void, where not prohibited by law, if you use non-Fargo Certified Supplies. To order additional materials, please contact the authorized reseller.

Reviewing the Thermal Transfer Film and PolyGuard Overlaminates

Term	Description	Cross Reference
Thermal Transfer Film and PolyGuard Overlaminates	The Card Lamination Module will accept either a Thermal Transfer Film overlaminate or a Polyester Patch Overlaminate called PolyGuard™. • **Thermal Transfer Film:** The Thermal Transfer Film overlaminate is a relatively thin material which Covers a card Edge-to-Edge and provides a medium level of card durability and security.) • **PolyGuard Overlaminate:** PolyGuard is a much thicker material which does not Cover Edge-to-Edge, but provides an extremely high level of card durability and security. (**Note:** PolyGuard is available in either a 1.0 or .6 mil thickness and should always be used for those applications requiring the highest degree of card durability and security.)	See the Loading the Overlaminate.

Reviewing the Overlaminate Design

Term	Description	Cross Reference
Design	Both PolyGuard and the Thermal Transfer Film overlaminates are available in either a clear or generic secure holographic-type design. (**Note:** Custom holographic-type overlaminates are also available with specific designs, patterns, logos and security features.) Please contact the authorized reseller for more information about custom Overlaminates.	See the Loading the Overlaminate. .

Installation Procedures

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Inspection – HDP5000

While unpacking your Printer, inspect the carton to ensure that no damage has occurred during shipping. Make sure that all supplied accessories are included with your unit.

Unpacking the Printer.

The following items are included with your Printer:

- Software Installation CD (includes Printer Driver, Online User's Guide and Printer Diagnostic Tool)
- Power Supply with Power Cord (**Note:** This product is intended to be supplied by a Listed Power Unit marked "Class 2" and rated for 24 V dc, 3.75 to 5 A.)
- Card Cleaning Roller
- Card Cartridge
- Card Output Bin
- Warranty Card
- Registration Card

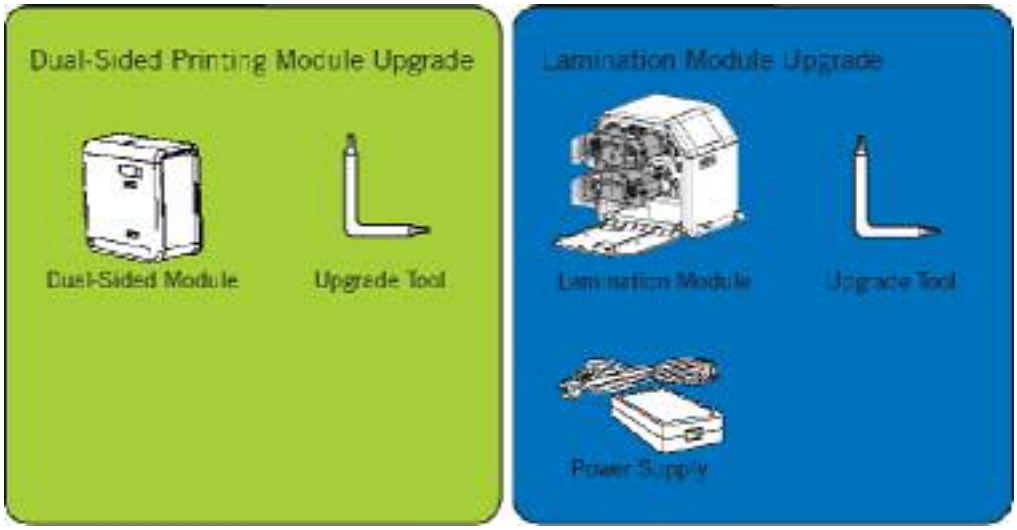
This is included with the HDP5000-LC Only:

- Card Lamination Module - Power Supply with Power Cord

(Important: Please use the original packaging when shipping the HDP5000 Printer/Flipper/Laminator. This will require the Laminator Module to be detached from the Printer or Flipper prior to shipping.)

Display A – See the HDP5000 Printer Installation Guide

Display B – See the HDP5000 Printer Installation Guide



Choosing a Good Location

Follow these guidelines:

- Place the unit in a location with adequate air circulation to prevent internal heat build-up.
- Use the Printer's dimensions as a guideline for the minimum clearances to the unit. (**Note:** Allow for adequate clearance above the unit to accommodate the height of the unit with its Covers open.)
- Do not install unit near heat sources such as radiators or air ducts or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

About Moisture Condensation

If the unit is brought directly from a cold to a warm location or is placed in a very damp room, moisture may condense inside the unit. Should this occur, print quality may not be optimum.

Leave the unit turned OFF in a warm, dry room for several hours before using. This will allow the moisture to evaporate.

 **Caution:** For safety purposes, Ethernet is not intended for a direct connection outside of the building.

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Packing the Card Printer for transport

The purpose of this section is to provide the User with a specific packing procedure for the HDP5000.

(**Note:** Do not install the Lamination Module to the Printer before shipping. The Lamination Module must be packaged in its own box and shipped separately, then installed at the site. Attaching both modules together before shipping may cause damage.)

Follow this instruction to pack the Card Printer for transport.

Step	Procedure
1	Clean the inside of the Printer with deionized air. Wipe it down with a lint-free cloth.
2	Clean the Printhead with a Printhead swab.
3	Pack the Printer in the original carton and packing materials.
4	Be sure to enclose any necessary paperwork, test cards, etc.