HDP700 Series Card Printer Technical Service and Maintenance Manual

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This manual is intended for use by service and maintenance personnel who desire more technical information than is contained in the online User's Guide. It contains diagnostics, calibration, and parts replacement procedures. Refer to the online User's Guide, included with the printer, for instructions on general setup, installing supplies and standard operation.

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Patent Pending

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FARGO Electronics, Incorporated
6533 Flying Cloud Drive
Eden Prairie, Minnesota 55344 U.S.A.
(952) 941-9470 (phone)
(800) 459-5636 (toll free)
(952) 941-7836 (fax)
www.fargo.com

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Section

1

Specifications

Regulatory Compliances

FCC

The Card Printer complies with the requirements in Part 15 of the FCC rules for a Class B digital device. These requirements are designed to provide reasonable protection against harmful interference in a residential installation. If, however, operation of this equipment in a residential area causes unacceptable interference to radio and TV reception, the operator is required to take whatever steps are necessary to correct the interference.

UL

The Card Printer is listed under UL 1950 INFORMATION TECHNOLOGY EQUIPMENT.

File Number

E145118, Volume 1, Section 15.

CSA

The printer manufacturer has been authorized by UL to represent the Card Printer as CSA Certified under CSA Standard 22.2.

File Number

E145118.

TÜV-GS

The Card Printer has been tested and complies with IEC950 and bears the TÜV-GS mark.

License Number

S9971826.

ITS-EMC

The Card Printer has been tested and complies with EN55022 Class B: 1995 and EN70082-1: 1997 standards for EMI emissions.

License Number

J99032510.

Based on the above testing, the printer manufacturer certifies that the Card Printer complies with all current EMC directives of the European Community and has placed the CE mark on the Card Printer.

Agency Listings

Safety Standards

UL 1950, CSA C2.2 No.950-95 and TüV-GS (EN 60950 A1-A4, A11).

Emissions Standards

CE, FCC, CRC c1374, BSMI, ITS (EN 55022 Class B:1995, FCC Class B, EN 70082-1:1997).

Technical Specifications

Printing Method

HDP™ Dye-Sublimation/Resin Thermal Transfer.

Printing Resolution

300 dpi (11.8 dots/mm).

Colors

Up to 16.7 million colors and 256 shades per pixel.

Print Speed-Batch Mode

Approximately 35 seconds (YMC with transfer).

Approximately 41 seconds (YMCK with transfer).

Approximately 60 seconds (HDP720, dual-sided YMCKK with transfer).

Accepted Standard Card Size

CR-80: 3.375 in. x 2.125 in. (85.6mm x 54mm).

CR-90: 3.63 in. x 2.37 in. (92mm x 60mm).

CR-100: 3.88 in. x 2.63 in. (98.5mm x 67mm).

Print Area

Over-the-edge on all accepted standard card sizes.

Maximum Accepted Card Width Range

2.95 in. to 2.33 in. (54mm to 67mm).

Maximum Accepted Card Length Range

3.375 in. to 3.88 in. (85.6mm to 98.5mm).

Accepted Card Thickness

.030 in. (30 mil) to .060 in. (60 mil) (.762mm to 1.524mm).

Accepted Card Types

ABS, PVC, PET, PETG, proximity and smart cards.

Card Capacity

250 cards (30 mil); auto or manual feed.

Memory

8 MB RAM; expandable to 32 MB RAM.

Display

User-friendly, four-line LCD display with Soft key Control Pad.

Software Drivers

Windows 95/ 98/ ME/ NT/ 2000.

System Requirements

IBM-PC or compatible. Windows 95/ 98/ ME/ NT/ 2000. Pentium™ class 133 MHz computer with 32 MB of RAM or higher, 200 MB free hard disk space or higher, and ECP parallel port with DMA access.

Interface

Centronics parallel, IEEE-1284 Compliant

Operating Temperature

65ºF to 80ºF (18ºC to 27ºC).

HDP Film Storage Temperature

77ºF (25ºC) or lower for no longer than 1.5 years.

Humidity

20% to 80% Non-Condensing.

Dimensions

14.3 in. H x 26.1 in. W x 14.3 in. D (363mm x 663mm x 363mm).

Weight

70 lbs. (31.8kg).

Supply Voltage

100 to 240 V ac.

Supply Frequency

50 Hz/60 Hz.

Section

2

General Troubleshooting

2.1 Contacting FARGO Technical Support

If you have read the suggested Sections of the Technical Service and Maintenance Manual and were unable to find the answer(s) to your question(s), contact the FARGO Technical Support Group by phone at (952) 941-0050 or by fax at (952) 941-1852 for assistance.

Or, contact FARGO Technical Support via the Web:

http://www.fargo.com/tech_support/contact_tech_support.asp

Position a phone near the printer and computer so we can help troubleshoot the printer. Please have a self-test and a sample card ready when you call FARGO Technical Support.

2.2 LCD Display Messages

The LCD display shows the current status of the printer. Please refer to the following tables for a complete list and cause of all possible LCD messages. Note that these tables display the LCD messages in alphabetical order. If the LCD message is communicating an error or requires an action, these tables will also offer a solution to what should be done.

LCD Messages

Table 2-1

Message	Cause / Solution
Add Cards	Indicates there is not an adequate supply of cards in the Card Input Hopper.
Aligning Film	If this appears as a *prompt*, the HDP Film is self-aligning to the proper position for printing. If this appears as an *error* see Section 2.7.1.
Aligning Ribbon	If this appears as a *prompt*, the print ribbon is self-aligning to the proper position for printing. If this appears as an *error* see Section 2.6.1.
Card Jam	A card is jammed in the Transfer Station or card flipping area of the printer. See Section 2.7.3.
Card Jam: Flipper	A card is jammed in the card flipping area of the printer. See Section 2.4.3.
Card Jam: Mag	A card is jammed in the magnetic encoding area of the printer. See Section 2.5.4.
Card Jam: Smart	A card is jammed in the smart card encoding area of the printer. See Section 2.5.7.
Card Jam: Transfer	A card is jammed in the Transfer Station of the printer. See Section 2.7.3
Cards Low	Indicates there is not an adequate supply of cards in the Card Input Hopper
Data Input	The print data sent to the printer is corrupt or has been interrupted. Refer to Section 2.3.
Data Timeout	The print data sent to the printer is corrupt or has been interrupted. Refer to Section 2.3.
Door/Lever Unlocked	You are trying to print with the Front Access Door open or the Release Lever in the unlocked position. See Section 2.6.8.
DRAM Memory Error	The printer's memory module is bad or not installed properly. See Section 6.1.3
EE Checksum Error	Permanent circuit board memory is bad. See Section 6.1.1.
EE Memory Error	Permanent circuit board memory is bad. See Section 6.1.2.
Ejecting Used Card	The system firmware has detected a card already in the printer and is ejecting it.
Film Out	The HDP Film has run out. Install new Film, and press RESUME to continue.
Film (upper) Film (lower)	The HDP Film is not installed properly, or has run out, jammed, broken, or been damaged. See Section 2.7.1.
Film Sensing	The printer was unable to sense the HDP Film properly while printing. See Section 2.7.1.
Flipper Alignment	Unable to align flipper. See Section 2.4.4.
FPGA	An unexpected hardware error has occurred. See Section 6.1.5.
FPGA Load Fail	An unexpected hardware error has occurred. See Section 6.1.5.
FPGA Timeout	An unexpected hardware error has occurred. See Section 6.1.5.
Head Lift	The printer was unable to raise or lower the Printhead. See Section 2.6.5.
Head Resistance Error	Please enter a value for head resistance in the LCD Printer Setup menu. See Section 7.3.20.
Head Voltage Error	A hardware fault has prevented setting the correct Printhead voltage. See Section 7.3.20.
Initializing	Indicates the printer is beginning its startup system check.
Mag Encode Failed	The magnetic stripe was not encoded properly. See Section 2.5.3.
Multiple Cards Fed	Two or more cards fed from the Card Hopper. See Section 2.4.1.
No ENC Response	There is no response from the encoder control module. See Section 2.5.1.
No MAG Encoder	You are trying to send encoding data, but the printer is not configured with this encoder type. See Section 2.5.2.
No SMART Encoder	You are trying to send encoding data, but the printer is not configured with this encoder type. See Section 2.5.6.
Output Hopper Full	The output stacker is full of cards; empty the output stacker to avoid a jam.
Pause...	Indicates the printer is paused.
Print Data	The print data sent to the printer is corrupt or has been interrupted. Refer to Section

	2.3
Print Ribbon	The print ribbon is not installed properly, or has run out, jammed, broken, or been damaged. See Section 2.6.3.
Print Ribbon Out	The print ribbon has run out.
Print Timeout	The printer was unable to complete the print process. See Section 2.3.
Printer Open	You are trying to print with the Print and/or Transfer Station open. See Section 2.6.8.
Program Exception	The system firmware has detected an error while attempting to process the current print job. See Section 2.3.
RAM Memory Error	The printer's memory module is bad or not installed properly. See Section 6.1.4.
Realigning Film	Indicates the printer is aligning the HDP Film to the proper position for printing. Usually occurs after the printer has finished a print job.
Smart Encode Failed	The card's smart chip was not encoded properly. See Section 2.5.6.
Starting Self-test	Indicates the self-test print is preparing to print.
Printhead Temp	The Printhead temperature regulator is not functioning properly. See Section 2.6.7.
Temperature Timeout	The Transfer Roller is unable to reach the optimum temperature. See Section 2.7.4.
Testing Memory	Indicates the printer's memory is being tested.
Transfer Cooling	The printer's Transfer Roller is cooling to the proper temperature. See Section 2.7.2.
Transfer Lift	The printer was unable to raise or lower the transfer roller. See Section 2.7.5.
Transfer Timeout	The printer was unable to complete image transfer. See Section 2.7
Transfer Warming	The Transfer Roller is warming to the proper temperature. See Section 2.7.2
Unable To Feed Card	The printer is unable to feed a card from the Card Hopper. See Section 2.4.1
Update Firmware Now	The system firmware MUST be updated. See Section 7.5.
Wrong Print Ribbon	The print ribbon installed in the printer does not match the ribbon type selected in the printer driver. See Section 2.6.4

SmartGuard™ Error / Status Messages

These messages only apply if you are using the printer's optional SmartGuard Security Feature.

Table 2-2

Message	Cause / Solution
Access Card Deleted	The data on the SmartGuard Access Card was successfully deleted. Press the OK button to continue.
Access Card Ready	The SmartGuard data has successfully been encoded onto the SmartGuard Access Card. Press the OK button to continue.
Delete Card Data?	To delete the SmartGuard Access Card data, press the YES button. To cancel the deletion process, press the NO button.
Insert Access Card	You are trying to print without the SmartGuard Access Card inserted. Insert a valid SmartGuard Access Card.
Insert New Card	To duplicate the SmartGuard Access Card, remove the valid access card, and insert a blank access card. Then, press the COPY button to complete duplication or press CANCEL to cancel duplication.
Invalid Access Card	The SmartGuard Access Card is invalid or is inserted backwards or up side down. Insert a valid SmartGuard card or reinsert the card properly with the chip end down and facing you.
Invalid Password	You have entered an invalid SmartGuard password. Re-enter the correct password using any of the standard keyboard characters.
Reading Access Card	Indicates the printer is reading the data from the SmartGuard Access Card.
SmartGuard Disabled	The SmartGuard Security Feature has successfully been disabled. You no longer need to insert an access card to operate the printer. Press the OK button to continue.
SmartGuard Enabled	All data has successfully been encoded onto the SmartGuard Access Card. The SmartGuard Security Feature now protects the printer. From now on, you must insert a valid access card to operate the printer. Press the OK button to continue.
Writing Access Card	Indicates the SmartGuard Access Card is being encoded.

2.3 Communication Errors

Symptom(s): Incorrect output, communications error on PC or printer, stalling, no response from printer, no job printed, "paper out" error.

2.3.1 System does not meet requirements.

Confirm that the system meets the minimum requirements.

- IBM-PC or compatible.
- Windows 95/98/ME/NT/2000
- Pentium™ class 133 MHz computer with 32 MB of RAM or higher.
- 200 MB free hard disk space or higher.
- ECP parallel port with DMA access.

2.3.2 A driver or application is conflicting with the FARGO driver.

Close the software program and check the printer driver. Reboot the computer. Make sure the printer driver is installed correctly. (Especially if an obsolete driver was recently removed.) Be sure the correct setup options within the printer driver are selected. Confirm that the driver is current by checking at www.fargo.com.

2.3.3 Using an inadequate data cable.

Use a double-shielded parallel cable, no longer than six feet in length. Data transmission failure can be attributed to a long or faulty parallel cable. Radio frequency interference (RFI) may be the cause if black resin text appears smeared (or is too dark), colors are misregistered, or the output is garbled. A double-shielded, I-EEE 1284 compliant cable will reduce the effect of radio emissions from computers, monitors, and other equipment that may broadcast RFI.

2.3.4 Interference from external device.

Do not use an A/B switch box or other peripheral in line with the parallel cable. If using a switch box or other peripheral, remove it while testing communication between the computer and the printer. If needed, replace it once the cause of the interference is determined not to be the switch box or peripheral. Alternatively, a second parallel port may be added into the computer if a second printer is required.

2.3.5 Cannot print from application.

- Print a self test from the printer as described in Section 7.2 to ensure that the printer itself is functioning properly.
- Print the Windows test page that is located in the **General** tab of the driver.
- Use **WordPad** (a Windows 95/ 98/ ME/ NT/ 2000 word processing program in the Accessories Program Group). Open the program and type: "This is a Test." then, go to File on the menu bar and select Print.

2.3.6 Parallel port mode set incorrectly.

Ensure that the Parallel port is set to Enhanced Communication Port (ECP) mode. The port mode can be determined by checking the Device Manager tab in the System Control panel. If the port mode is not set to ECP, it will need to be changed in the computers BIOS. Refer to the computer manual for instructions on how to change Parallel Port Mode.

2.3.7 Inadequate hard drive space.

A large amount of temporary files on your computer can cause communications errors. Temporary files can be found by following these directions:

- Search for all folders called “TEMP”. Once found, clear the contents of the folders.
- If using Windows 95/98/ME/2000 run the system utility **Disk Defragmenter** found in the Accessories folder of the Start Menu.
- Use a disk cleanup utility such as **Disk Cleanup** found in the System Tools folder of the Start menu, or a third party application.

2.4 Card Feed Errors

Symptom: Cards don't feed from input hopper, cards jam in flipper or transfer Section, or LCD Errors.

2.4.1 Two or more cards are feeding at the same time or cards are not feeding properly

- Remove the stack of cards. Ensure that the cards are not sticking together. Manually separate them if needed. Remember not to touch the surface of the card. Dirt or oil from hands will impair quality.
- Slide the left wall of the Input Hopper to the proper location. The wall of the card hopper should be within .030" (.75mm) of the stack of cards.
- When loading cards, it is important that the Card Thickness Adjustment Knob be set accordingly to ensure the printer feeds only one card at a time.

  1. Open the Front Access Door.
  2. Locate the Card Thickness Adjustment Knob.
  3. Adjust this knob to the setting that matches card thickness. See Figure 2-1. *For fine scale changes, see Adjusting the Card Separator Flap in Section 3.1. The adjustment knob controls the position of the printer's internal Card Separator which is designed to accommodate a range of card thickness surrounding the given card thickness settings.*

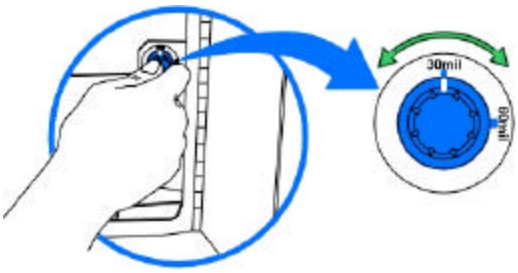


Figure 2-1

- The Cleaning Rollers may be dirty or not installed correctly. If the Cleaning Rollers are dirty or not installed correctly, the card may slip or jam. Refer to Section 3.9.4 for instructions on how to clean the Cleaning Roller.
- Inspect the Card Feed Roller Motors for proper operation. See Section 2.4.2

2.4.2 Card is stalling on or at the feed rollers

- Use the arrows on the LCD panel to move the card forward or backward to free it.
- Inspect the Card Feed Roller Motors for proper operation.

  1. Leave the power ON and open the Print and Transfer Stations.
  2. Press the FORWARD button to advance the card or the BACK button to reverse the card. Use these buttons to move the card through the printer.

2.4.3 Card jamming on the Flipper Table

A card is jammed in the card flipping area of the printer. To clear the jam, see Section 2.7.3 for information.

2.4.4 Printer is unable to align flipper

- Open the Front Access Door and ensure that there are no obstructions.
- Test the Flipper Table Home Sensor (140407) by entering the FLIPPER OFFSET in the PRINTER SETUP menu on the LCD display. Without making any adjustment, press the SELECT button. This should cause the Flipper Table to attempt to home itself.
- Test the Flipper Table Home Sensor (140407) as described in Section 6.2. If sensor is not working, replace as described in Section 4.8.11

2.4.5 Card feeds improperly off the Flipper table

Confirm that the Flipper Table Home Sensor is functioning as described in Section 2.4.4. If the Flipper Table Home Sensor (140407) is functioning properly, adjust the FLIPPER OFFSET as described in Section 7.3.24.

2.5 Encoding Errors

Symptom: No output encoded, unable to read encoded data on card, LCD error occurs.

2.5.1 No ENC Response

- Ensure that the two wires to J62 on Lamination Board are properly seated. Check the wires to ensure that they are plugged in properly.
- The cable between the Print and Lamination Board may be bad. Replace the cable and see if the error repeats itself.
- The Lamination Board may be bad. Replace the Lamination Board as described in Section 4.9.4 and see if the error repeats itself.

2.5.2 No MAG Encoder

The printer is receiving encoding data, but the printer is not configured with this encoder type.

If this message appears and the printer is equipped with a Magnetic Encoder, refer to Section 7.3.22 to change the encoder settings. If the encoding data was sent in error, check your software user's manual for encoding instructions.

2.5.3 Mag Encode Failed

The magnetic stripe was not encoded properly. Check to ensure that the cards are loaded with the magnetic stripe facing down and towards the back of the printer. If cards are loaded properly, verify your driver settings as described in Section 3.7.

2.5.4 Card Jam: Mag

A card is jammed in the magnetic encoding area of the printer. Clear the jam as described in Section 2.7.3. Ensure that the cards are feeding into the encoding module properly, if it is not, see Section 2.4.5 for instructions on how to adjust the flipper offset.

2.5.5 No SMART Encoder

The printer is receiving encoding data, but the printer is not configured with this encoder type.

If this message appears and the printer is equipped with a Smart Encoder, refer to Section 7.3.22 to change the encoder settings. If the encoding data was sent in error, check your software user's manual for encoding instructions.

2.5.6 Smart Encode Failed

The card's smart chip was not encoded properly. Check to ensure that the cards are loaded with the smart chip facing up and away from the Input Hopper Door.

2.5.7 Card Jam: Smart

A card is jammed in the smart card encoding area of the printer. Clear the jam as described in Section 2.7.3. Ensure that the card is feeding into the encoding module properly, if it is not; see Section 2.4.5 for instructions on how to adjust the flipper offset.

2.5.8 Unable to read encoded data

- Check to ensure that the cards are loaded properly with the magnetic stripe facing down and towards the back of the printer.
- Check to ensure that the card is encoded with magnetic data by using a magnetic imager or developer solution.
- Use **WordPad** (a Windows 95/ 98/ ME/ NT/ 2000 word processing program in the Accessories Program Group). Open the program and type: "~1%JULIEANDERSON^1234567890?" then, go to File on the menu bar and select Print. The printer should then feed a card into the encoder and magnetically encode it.

- Ensure that the coercivity of the cards matches the setting in the driver.
- Compare the settings for the card reader to the settings in the driver.
- Ensure that the magnetic stripe on the card is free of scratches or voids.

2.5.9 Data intended for the magnetic stripe was printed on the card.

- Confirm that the application is formatting the magnetic string correctly. See Section 3.7.7.
- Use **WordPad** (a Windows 95/ 98/ ME/ NT/ 2000 word processing program in the Accessories Program Group). Open the program and type: "~1%JULIEANDERSON^1234567890?" then, go to File on the menu bar and select Print. The printer should then feed a card into the encoder and magnetically encode it.

2.6 Printing Process Errors

2.6.1 Aligning Ribbon Error

- Ensure that the ribbon is loaded properly and completely seated on the hubs.
- Check to make sure the marks on the ribbon are complete.
- Check motor operation by ensuring that the ribbon moves in both forward and backward directions on power up.
- Remove the back cover and locate the connector labeled J65 on the main board. Check the voltage for each of the 5 ribbon sensors where they connect to the main board. With a multimeter, ground the negative lead to the chassis and put the positive lead on pins 3, 5, 7, 9, and 11 of J65 on the main board. Place a RibbonTraq™ mark over the ribbon sensor. The voltage should be less than 1 VDC. Remove the RibbonTraq mark from the ribbon sensor. The voltage should be greater than 4 VDC. Replace the sensor if the voltages are incorrect.
- The Ribbon may be out, install a new ribbon, and press the RESUME button to continue.
- The Ribbon may be jammed, clear the jam and reboot the printer.
- The Ribbon may be broken, repair by taping the ribbon back on to the take-up core. Press the RESUME button to continue or CANCEL to reset the printer.

2.6.2 Print Ribbon

The Print Ribbon is not installed properly, or has run out, jammed, broken, or been damaged. See the remainder of Section 2.6 for details.

2.6.3 Print Ribbon Out

The Print Ribbon has run out. Install a new ribbon, and press RESUME to continue.

2.6.4 Wrong Print Ribbon

The Print Ribbon installed in the printer does not match the ribbon type selected in the printer driver. Press RESUME to continue the print job, or press CANCEL to end the current print job and change the Ribbon type in the driver as described in Section 3.3.1

2.6.5 Head Lift

The printer was unable to raise or lower the Printhead.

Press the RESUME button to retry. If the headlift does not rotate, check the Headlift Motor to ensure that it is running. If the headlift motor is not running, replace the Headlift Motor as described in Section 4.4.8. If the head cycles but does not stop at the position every time, check the Headlift Sensor as described in Section 6.2. If the headlift sensor is failing, replace as described in Section 4.4.9.

2.6.6 Printer pausing between panels

- The Printhead Fan is not operating properly. Confirm that the fan operates correctly. Upon power up, the fan should run momentarily and shut off. Verify that the fan is plugged into the Main Print Board properly on J67.
- Check the Printhead fans for pinched wires. Inspect the wires that are routed under the top cover and through to the back of the board to ensure that they are not pinched.
- The thermal regulator on the Printhead may have failed. Remove the Printhead and reseat cable connections. If problem persists, replace with a new Printhead as described in Section 4.3.1.
- Data may not be received by the printer at the speed that it requires. See Section 2.3.

Note:

The Printhead Fan will run backwards if it is plugged in backwards. This will prevent proper cooling of the Printhead.

2.6.7 Printhead Temp

The Printhead temperature regulator is not functioning properly.

- Reboot the printer. If the problem persists, remove the Printhead and ensure that the Printhead Cables are seated properly. If necessary, the back cover may need to be removed to verify the Printhead Cable connection to the Main Print Board.
- If after checking the Printhead Cable connection at both the Printhead and the Main Print Board, (the error is still displayed on startup) replace the Printhead as described in Section 4.3.1.
- Confirm that the cooling fan above the Printhead is operating properly. Upon power up, the fan should run momentarily and shut off. If problem persists, install a new Printhead. If problem still remains, replace the Main Print Board. See Section 4.9.3 for instructions.

2.6.8 Printer Open

The printer is operating with the Print and/or Transfer Station open. Ensure that both the Print and Transfer Stations are completely closed and that the release lever is secured.

If the Print and Transfer Stations are completely closed, check the sensor (1404107) as described in Section 6.2.

2.7 Transfer Process Errors

2.7.1 Transfer Film Drive Error

- Lower Film Sensor may have failed. Check the voltage for the Film Sensor where it connects to the Lamination Board.
    1. Place a Film mark over the Film Sensor. The voltage should be less than 1 VDC.
    2. Remove the Film mark from the Film Sensor. The voltage should be greater than 4 VDC.
    3. Replace the sensor if the voltages are incorrect.
- Upper Film Sensor may be out of calibration. Calibrate the sensor as described below.
    1. Position the Transfer Film so that the clear portion is between the slotted optical sensor.
    2. Turn the potentiometer on the sensor board with a small slotted screwdriver until the LED on the board turns on.
    3. Back the potentiometer off until the LED just turns off
- A wire may be broken off of the motor. There are two motors that drive the Transfer Film. Verify that both motors are connected to J66 on the Lamination Board. Disconnect the motors; a 9 VDC battery connected to the motor leads should make it turn. If the motors do turn, verify the wire connections at the motor and replace or solder as needed.
- The Print or Lamination Board may have failed. Replace the Print Board as described in Section 4.9.3. Replace the Lamination Board as described in Section 4.9.4.

2.7.2 Laminator Cooling Error

The LCD indicates a Laminator Cooling error for an extended period of time.

1. Driver Settings may be too extreme. Run a self-test from the printer as described in Section 7.3. This will cause the Laminator to attempt to operate at the default temperature.
2. Transfer Temp setting may be too high. Check the Transfer Temp setting in the LCD setup menu to ensure that the setting matches the label on the back of the printer. If it does not, follow the instructions in Section 7.3.8 to adjust the Transfer Temp setting.
3. The Thermocouple may have failed. To check the Thermocouple, use a multimeter to check the leads across the Thermocouple Control C111 on the Lamination Board. The voltage should be equal to the desired temperature (degrees C) divided by 100 with an accuracy of +/- 10 degrees C. If the correct value is not retuned, the Thermocouple may need to be replaced.
4. The Lamination Board may be bad. Replace the Lamination Board as described in Section 4.9.4.

2.7.3 Card Jam

- Card may be blocked or restricted in the Transfer Station. To continue printing with the same card
    1. Start by leaving the power ON and opening the Print Station and Transfer Station.
    2. Press the FORWARD button to advance the card or the BACK button to reverse the card. Try not to move the card too far from where it was just before the jam occurred. Once the jam is cleared, close the printer, and press the RESUME button to resume printing.
- Card may be blocked or restricted in the Transfer Station. To remove the jammed card from the printer
    1. Start by leaving the power ON and opening the Print Station and Transfer Station.
    2. Use the FORWARD and BACK buttons to manually eject the card. Then, close the printer. The LCD Display will then display a prompt to either press the RESUME button or the CANCEL button.

3. Press the CANCEL button to reboot the printer and cancel all jobs from the printer memory. All current print jobs will be canceled and will need to be resent from the computer.

2.7.4 Temperature Timeout

- Run a self-test as described in Section 7.2. If no error occurs, the settings in driver may be too high or too low. See Section 3.5 for instructions of how to adjust the transfer settings.
- The Transfer Roller is unable to reach the optimum temperature. Turn the printer OFF and ON to reset, and try reprinting. If the problem persists, see Section 2.7.2 to test the Thermocouple.

2.7.5 Transfer Lift

The printer is unable to determine the placement of the Lamination Roller. Check to ensure that the Transfer Lift Motor is running. Disconnect the motor from the Lamination Board. A 9 VDC battery connected to the motors' leads may be used for testing. If the motor does turn, replace the Transfer Lift sensor as described in Section 4.5.13. If the motor does not turn, replace the Transfer Lift Motor as described in Section 4.5.14.

2.8 Output Errors

2.8.1 Cards feed into the Output Stacker, but are not lifted up into place.

- Check operation by resetting the printer and visually confirming that the stacker cycles on power-up.
- Verify that the wires (840121) from the Output Stacker are connected properly and are well seated in the wire harness.
- Ensure that the Output Stacker is set to the correct card size. Slide the wall of the Output Stacker to the correct card size.
- Test the operation of the Stacker Lift Motor by disconnecting the cable connector, and connecting a 9V battery to the wires. If the motor does not turn, replace the motor. If the motor does turn, the Lam Board may need to be replaced as described in Section 4.9.4

2.9 Diagnosing Image Problems

2.9.1 Pixel Failure

Symptom: A thin line or scratch travels the entire length of the card.

- Check the card stock for scratches; replace the cards if necessary.
- Examine the Printhead for visible damage.
- Clean the Printhead as described in Section 3.9.1.
- Clean the Cleaning Rollers as described in Section 3.9.4.
- Clean the Platen Rollers as described in Section 3.9.2.

2.9.2 Card Surface Debris

Symptom: Prints have "spots" (white or colored voids) and/or dust on them.

- Be sure the cards are clean and stored in a dust-free environment. Cards with embedded contaminants in the surface should not be used.
- Clean the inside of the printer as described in Section 3.9.3.
- Clean the Cleaning Rollers as described in Section 3.9.4.
- Clean the Platen Rollers as described in Section 3.9.2.

2.9.3 Incorrect Image Darkness

Symptom: Printed cards are too dark or too light.

- Run a self test as described in Section 7.2. This will ensure that the issue is not with the driver settings.
- Adjust the **Dye-Sub Intensity** setting within the Image Color tab of the printer driver as described in Section 3.4
- Correct the **Image Darkness** as described in Section 7.3.21.

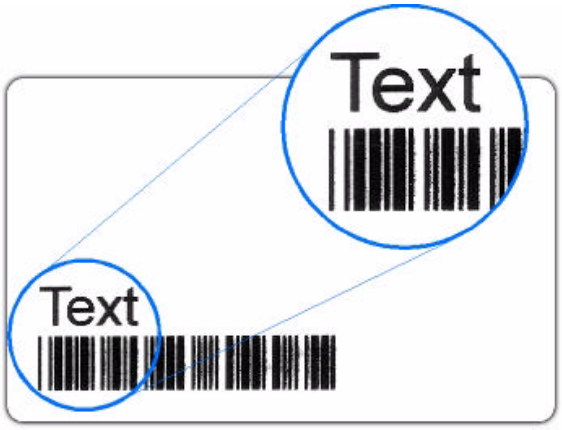
2.9.4 Ribbon Wrinkle

Symptom: Printed cards have off-colored lines or streaks on them.

- Confirm that the printer is using the most current driver from http://www.fargo.com.
- Reduce the **Dye-Sub Intensity** setting within the Image Color tab of the printer driver as described in Section 3.4.
- Reduce the **Image Darkness** as described in Section 7.3.21.
- Adjust the **Ribbon Tension** as described in Section 7.3.6.
- Adjust Printhead Bracket Adjustment Screws. These can be found on the backside of the Printhead. See drawing D840854. Loosen both of the screws and adjust the bar slightly outward. Tighten the screws and print a self-test.
- Check the Printhead and Printhead Mounting Bracket for debris and burrs.

2.9.5 Excessive Resin Printing

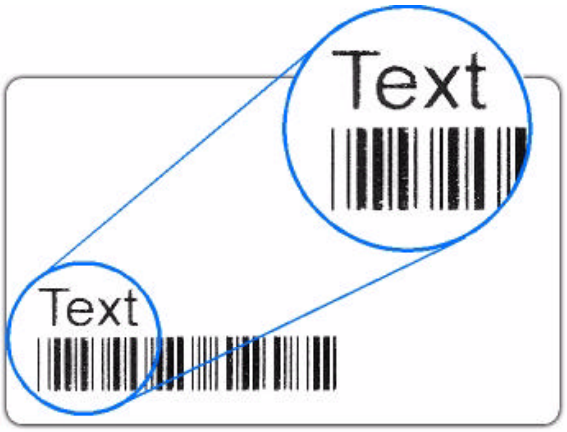
Symptom: Black resin text and barcodes appear smeared or too thick.



- Reduce the **Resin Heat** setting within the **Image Color** tab of the printer driver as described in Section 3.4.
- Reduce the **Image Darkness** as described in Section 7.3.21.

2.9.6 Incomplete Resin Printing

Symptom: Black resin text and barcodes appear faded or too light.



- Increase the **Resin Heat** setting within the **Image Color** tab of the printer driver as described in Section 3.4.
- Increase the **Image Darkness** as described in Section 7.3.21.

2.9.7 HDP Film Wrinkle

Symptom: HDP Film is creased or wrinkled on the printed card.

Note

HDP Film wrinkle will appear clear, or look as though the entire image is wrinkled. Alternatively, ribbon wrinkle will appear as assorted colors.

- Align the edge of the HDP Film with the Transfer Station red alignment arrows to ensure the Film is tracking properly.
- Decrease the **Transfer Temperature** setting within the **Image Transfer** tab of the printer driver as described in Section 3.2.2.
- Decrease the **Transfer Temperature** through the LCD as described in Section 7.3.8.
- Adjust **Film Tension**
    1. In increments of one, lower the **Film Tension** through the LCD Setup Menu and print a card.
    2. If, after several adjustments, the film wrinkle appears worse return the **Film Tension** to the original setting and adjust the **Film Tension** up in increments of one.
    3. If still no change after the fourth adjustment, having made changes to the **Film Tension** by a total of 4 points, go back to the original **Film Tension** value.
    4. Lower the **Film Drive** by one and repeat steps 1-3 until the film wrinkle is alleviated.

2.9.8 Incomplete Transfer

Symptom: Printed image has ragged edges; HDP Film seems to have peeled off.

- Increase the **Transfer Temperature** setting within the **Image Transfer** tab of the printer driver as described in Section 3.2.2.
- Increase the **Transfer Temperature** through the LCD as described in Section 7.3.8.
- Ensure that the Lamination Roller makes uniform contact with the card. Confirm that the Lamination Roller moves up and down freely and that the Thermocouple wire does not restrict movement.
- If incomplete transfer is limited to the leading edge, the **Transfer Tension** is set too high. Decrease the **Transfer Tension** through the LCD as described in Section 7.3.2.
- If incomplete transfer is limited to the trailing edge, the **Transfer Tension** is set too low. Increase the **Transfer Tension** through the LCD as described in Section 7.3.2.

2.9.9 Image Placement

Symptom: Printing is cut off or is not centered on the card, or a white border appears.

- Verify that the HDP Film spools are wound evenly. If the spools are wound unevenly, replace the roll of HDP Film.
- Align the edge of the HDP Film with the Transfer Station's red alignment arrows manually to ensure the Film is tracking properly.
- Verify that the Ribbon and Film are properly seated on both sides. The hubs' axels should rotate as you rotate the spool. If not, replace the hubs as described in Section 4.5.11.
- Verify that the Dancer Rollers spin freely by opening the top and middle modules and manually spinning the Dancer Rollers.
- Confirm that the correct **Card Size** option is selected in the printer driver setup. Improper card size settings will place the image in the wrong area of the card.
- Confirm that the card is feeding straight into the print Section; if it is not, check to ensure that the Card Size Knob in the base module is set to the proper card size.
- Confirm that the Flattener is not impeding the card by manually feeding a card into the printer using the FORWARD and BACK buttons on the display. The card should move freely under the Flattener. If the card is hitting the Flattener, adjust the height of the Flattener by loosening the two screws that hold the Flattener.
- Verify that the upper and middle modules are seated properly and are completely locked down.

- Use the **Image Position** option within the **Image Transfer** tab of the printer driver as described in Section 3.5.1 to precisely center the image.
- Make sure that the Platen Roller is clean. If unsure, follow the procedure for cleaning the Platen Roller in Section 3.9.2.
- See **Print Offset, Transfer Tension, Transfer TOF (Top of Form), and Transfer EOF (End of Form) Alignment** in Section 7.3 to adjust the printer through the LCD.
- Verify that the Peel-Off Bar and the Ribbon Peel bar height is correct. From the front of the HDP Card Printer, the Peel-Off Bar on the input side (see drawing 840159) should be flush with the frame; the Ribbon Peel Bar on the output side should have a 3/16-in. (4.5mm) gap between the frame and the Ribbon Peel Bar. To try and remedy the offset printing, raise the bar higher off of the card 0.005 inches by loosening the screws for the Peel-Off Bar and carefully raising both sides the same amount. The Peel-Off Bar assembly should be equidistant from the frame at both ends.
- Adjust the **Ribbon Tension** by +1 and print a sample card. If symptoms appear better, continue adjusting until image placement is correct. If symptoms appear worse, adjust the **Ribbon Tension** by –1 and print a self-test. If this makes the image placement look better, continue adjusting until image placement is correct.
- Verify Platen Roller Drive Belts. The small belt is tensioned by a spring and the large belt should be tensioned by hand to approximately the same tension as the short belt.

2.9.10 Poor Image Quality

Symptom: Photos on the cards look pixilated or grainy.

Good **Bad**

- Use high-resolution, 24-bit color images. Always capture an image at a 24-bit color setting, at 300 dpi, and at the same size at which it will be printed on the card whether capturing with a scanner or digital camera. If a small or low-resolution image is stretched or "blown up", a pixilated or grainy effect will occur when printing.

2.9.11 Image Washout on Film

Symptom: Image appears to not be completely printed on Film.

- Verify that the upper and middle modules are seated properly and are completely locked down.
- Remove the Printhead and reinstall. If problem persists, replace the Printhead
- Printhead pressure may be too low. Check the Printhead path to ensure there are no obstructions and that the springs and cam are in the proper location. The lobe of the cam should be in the up position when not printing. See drawing 840160.
- Increase **Image Darkness** by increments of five as described in Section 7.3.21
- If printing with non-FARGO cards, try reprinting with FARGO cards.

2.9.12 Registration problem

Symptom: Colors are shifted slightly in the image creating colored edges or poor resolution.

- Upper Film Sensor is not in calibration
    1. Position the HDP Film so that a clear portion is between the slotted optical sensor.
    2. Turn the potentiometer on the sensor board with a small slotted screwdriver until the LED on the sensor board turns on.
    3. Back the potentiometer off until the LED just turns off
- Printhead pressure is too high or too low. Remove the Printhead as described in Section 4.3.1 and bend the two metal springs slightly toward the back of the upper module. Reinstall the Printhead and print a test card. If registration does not get better, remove the Printhead and bend the two metal springs away from the upper module slightly. Reinstall the Printhead and print a self-test.
- Adjust the Ribbon Tension by +1 and print a sample card. If symptoms appear better, continue adjusting until registration problems are gone. If symptoms appear worse, adjust the ribbon tension by –1 and print a self-test. If symptoms appear better, continue adjusting until registration problems are gone.
- Loosen the screws that hold the Film Drive Motor located in the middle module and pull the motor back against the belt. See drawing 840152. Hold the motor there and tighten the screws that hold the motor in place in this new position.

2.9.13 Image Skewed on the Card

Symptom: The self-test image appears skewed on the card.

- Film is tracking sideways. Open the lamination station and reload the Transfer Film so that Film moves straight onto spool. In extreme cases, it may be beneficial to remove the old Film from the take-up spool and reattach the Film in the proper location on the spool.
- Peel-Off Bar is not straight. The Peel-Off Bar should be equidistant from the Lamination Assembly frame at both ends. Adjust if necessary as described in Section 2.9.9.
- The card may be fed into the Transfer Station askew. Interrupt the transfer process to ensure that the card has fed properly into the Transfer Station. If the card has been fed skewed, ensure that the card size knob is set to the correct card size. Once the card size has been confirmed, manually feed a card into the printer using the FORWARD and BACK soft key buttons on the display. Position the card next to the spring loaded Card Pusher and ensure that the Card Pusher is applying pressure to the card.

Section

3

Printer Adjustments

This Section covers the replacement of key components of the card printer. Be sure to reverse the disassembly steps to reassemble the card printer.

Safety Messages

Procedures and instructions in this Section may require special precautions to ensure the safety of the personnel performing the operations. Information that raises potential safety issues is indicated by a warning symbol (as shown below).

Refer to the following safety messages before performing an operation preceded by this symbol.

DANGER

Failure to follow these installation guidelines can result in death or serious injury. Always remove the power cord prior to performing repair procedures, unless otherwise specified. Make sure only qualified personnel perform these procedures.

Procedures and instructions in this Section may require special precautions to ensure the safety of the personnel performing the operations. Information that raises potential electrostatic safety issues is indicated by a warning symbol (as shown to the below).

Refer to the following safety messages before performing an operation preceded by this symbol.

CAUTION

This device is electrostatically sensitive. It may be damaged if exposed to static electricity discharges. Be sure to observe all established electrostatic discharge (ESD) procedures while handling cables in or near the Circuit Board and Printhead Assemblies. Always wear an appropriate personal grounding device, such as a wrist strap with integral resistor, connected to an ESD ground to avoid potential damage.

IMPORTANT

Always remove the HDP Ribbon and Cards from the printer before making any repairs, unless otherwise specified. Take jewelry off of fingers and hands and be sure to thoroughly cleanse hands to remove oil and debris before working on the printer.

3.1 Fine-Tuning the Card Separator Adjustment Assembly (D840995)

The height of the Card Input Guide may need to be fine-tuned to accommodate a specific card thickness. The example given below describes adjusting the Card Input Guide for a 30-mil card.

Refer To Drawing 840156.

Tools Needed

.005 in. Feeler Gauge (Or a single sheet of paper)

Card (of appropriate thickness)

Place the card in the Card Input Hopper with the trailing edge of the card over the center line of the outside Feed Roller.

1. Position the Feeler Gauge (or sheet of paper) on top of the card and just under the Card Separator.
2. Locate the Card Thickness Adjustment Knob.
3. Adjust this knob to the setting that most closely matches the thickness of your card.
4. Locate the Card Separator Adjustment Assembly (840101).
5. Move the Height Adjustment Thumb Screw up and down until the gauge just touches the clear rubber.
   - If the gap above the card is too small, the card will not feed.
   - If the gap above the card is too large, multiple cards may feed.

NOTE

After completing this adjustment, be sure to test it. First, feed a card with a few cards in the hopper. Then, place a full stack of cards in the Card Input Hopper and feed a few cards. Continue to adjust the Card Separator Adjustment Assembly if needed.

3.2 Using FARGO® High Definition Printing™ (HDP™) Technology to Print on Alternate Card Stocks

3.2.1 Selecting the Right Cards and Optimizing the HDP Print Process

HDP technology has many advantages over direct-to-card printing where unique card materials and card surfaces are concerned. In order to optimize the HDP Card Printer's capabilities for customers using cards with hard-to-print surfaces, we recommend you evaluate your customer's card stock selection BEFORE delivery of their printer, and consult with them to determine optimal printer driver settings.

There is a great deal of variability in cards based on:

- Different surface textures and different sources of raw materials – may require different HDP Film transfer parameters.
- Varied methods of assembling IC smart cards and proximity cards – particular adhesives used to glue a smart chip to a plastic card may react differently to a lamination roller's pressure and temperature.
- Cleanliness of card stock – The HDP process does not eliminate the need to use clean card stock. The best-looking card always starts with the cleanest card surface. Dirt and debris on a card can show up as blemishes on the card surface and may reduce the life of the image itself.

For all these reasons, it is important to evaluate a customer's card stock selection as part of the selling process. This will help optimize the HDP print process for the specific card and maximize customer satisfaction in the printer. The remainder of this document describes how this should be done.

3.2.2 Selecting The Appropriate HDP Printer Driver Settings

FARGO offers two types of PVC cards: glossy UltraCard™ cards and matte-finished HDP-PVC Cards. The HDP printer driver software (version 1.3.0 or higher) has default Transfer Temperature, Dwell Time and Flattener Temperature settings that deliver the best transfer for these card types. These defaults automatically configure based on the card type, ribbon type, and whether printing single- or dual-sided. Before printing, if using these standard FARGO card types, check to make sure that the appropriate card type option selected from the Card Tab of the HDP printer driver:

Table 3-1

Card/Ribbon Type	**Transfer Temp**	**Transfer Time**	**Flattener Temp(1)**
UltraCards-Glossy PVC + non-H panel ribbon	175º	2 seconds/inch	Dual Side: 75º Single Side: 90º
HDP Cards-Matte PVC + non-H panel ribbon	195º	2 seconds/inch	Dual Side: 75º Single Side: 90º
UltraCards-Glossy PVC + H panel ribbon (2)	175º	2 seconds/inch	Dual Side: 75º Single Side: 90º
HDP Cards-Matte PVC + H panel ribbon (2)	175º	2 seconds/inch	Dual Side: 75º Single Side: 90º

(1) *Based on 30-mil card thickness. For thinner cards, reduce the Flattener temperature; increase the Flattener temperature for thicker cards.*

(2) *YMCKH panel ribbon provides a "Heat Seal" panel that aids in transferring to matte-finished cards and requires a lower transfer temperature. Note that only matte-finished cards with a surface roughness (Ra) of 60 micro inches or less are recommended.*

It is very important to note that not all card types will be accommodated by these default settings. In some cases experimentation may be needed to find the proper settings.

For the cases where custom settings are required, the printer driver's Card Type option also includes a "Custom 1" and "Custom 2" option. These settings allow designating a unique Card Type name, which then saves custom Image Transfer settings. For example, "Custom 1" could b e changed to read as "My Cards". Custom transfer settings would then be available whenever this Card Type option is selected and saved each time the printer driver setup window is closed. To determine the proper settings for custom card stock, FARGO recommends the Tape Adhesion Test.

3.2.3 Tape Adhesion Test

If printing to a card other than UltraCard or HDP-PVC, FARGO cannot be certain which transfer temperature and dwell time work best. Optimal transfer settings may vary from card type to card type. It is important to use sufficient time and temperature to transfer HDP Film to the card to ensure a long lasting, durable card. Inadequate time and temperature could produce cards that are more vulnerable to accelerated wear and dye migration.

One way to test the adhesion quality of the HDP Film to the card is by printing sample cards and completing an adhesive tape test. The IPC (Institute for Interconnecting and Packaging Electronic Circuits) outlines a pressure sensitive tape test (test manual Section 3.7, number 1, IPC-TM-650-3.7.1D) that evaluates adhesion quality.

Begin by selecting either "UltraCards-Glossy PVC" (if the card is glossy) or "HDP Cards-Matte PVC" (if the card has a buff, matte finish), and print a test card.

Next, apply a strip of ½" (12mm) wide Scotch-type clear adhesive tape (such as 3M brand 600), at least 2" (50mm) long, firmly across the surface of the card, pressing out all air bubbles with a fingertip. Remove the tape by smoothly and rapidly (approximately 2 inches/second (50mm/sec)) pulling it up at a perpendicular, angle to the card. The IPC recommends a minimum of three tests for each card type evaluation.

Visually examine the card and the strip of tape pulled from the card, to see if any portion of the HDP Film was removed from the card. (If any residue such as oil or grease from fingertips is present on the card surface, the evaluation results may be affected.) If particles of the printed, transferred HDP Film pull away from the card, and adhere to the tape, this indicates inadequate adhesion of the HDP Film to the card, and that increased heat and dwell times are necessary. Samples 1, 2, and 3 show a representation of the level of adhesion you should expect. Sample 1 is an absolute failure and sample 3 is an absolute pass. Sample 2 shows that *very slight* transfer to the tape can be acceptable without sacrificing overall image durability on matte finish cards.

If the tape test indicates inadequate adhesion, increase the heat setting by 5 degrees, print another card, and try the tape test again. Once the temperature has been increased 4 times (20 degrees), reset temperature to default and increase the dwell time by .5 second. Repeat this until adequate adhesion. Note that if you are printing to a matte- surfaced card, it is advantageous to use FARGO's YMCKH ribbon. This ribbon provides a "Heat Seal" panel that allows for improved adhesion to non-glossy PVC surfaces. For best results, be sure that the cards you are using have a surface roughness (Ra) of 60 micro inches or less. This information should be available from the card manufacturer.

Figure 3-1

Printer Driver Options

3.3 Device Options Tab

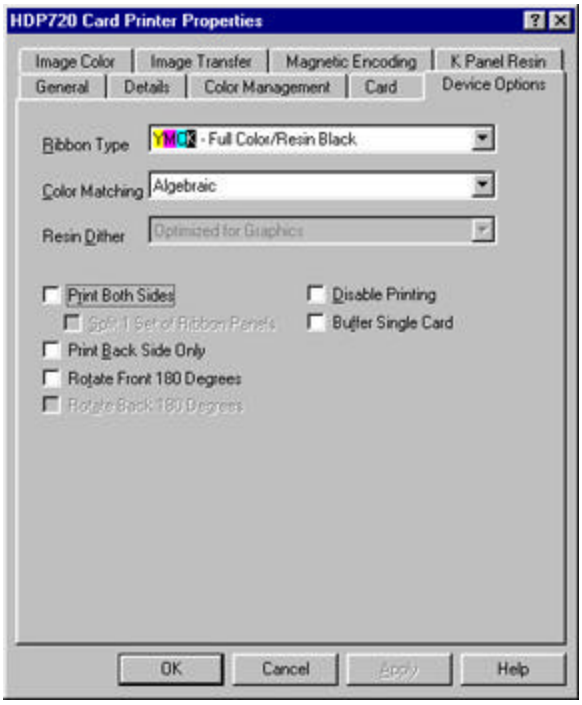


Figure 3-2

3.3.1 Ribbon Type

Used to match the ribbon type selection with the ribbon type that is loaded in the printer.

YMC- Yellow, Magenta, Cyan

YMCK – Yellow, Magenta, Cyan, Resin Black

YMCKH- Yellow, Magenta, Cyan, Resin Black, Heat Seal

3.3.2 Color Matching

Allows selection of the Color Matching option that best fits the requirements of the print job.

Select **None** if interested in print speed rather than print color, if color correcting the image for printing has already been done, or if using third party Color Matching software.

Select **Algebraic** to allow the printer driver to make very simple, fast, color balance adjustments. This option gives a natural-looking image without slowing down the processing speed of the printer driver. It also allows further customization of the printed color of the cards through the Image Color tab.

Select **Monitor** to allow the printer driver to make color corrections similar to the Algebraic option but through a more complex color matching algorithm. This option shifts colors more radically so the colors in the image will more closely match how they appear on screen.

3.3.3 Resin Dither

This option only affects those objects printed on the backside of a card with the resin black panel of a YMCK or YMCKK print ribbon. Select the appropriate dither method according to the type of image to be printed.

Select **Photo** if printing photo quality images with resin.

Select **Graphics** if printing lower quality images (i.e. clipart, logos, etc.) with resin.

3.3.4 Print Both Sides (HDP720 only)

Select this option to automatically print on both the front and backside of a card. This option can be selected in conjunction with any application program that supports a multiple-page document, duplex printing. In other words, the program must be able to send down two or more separate pages to be printed within the same document.

For example, to print a full-color ID format on the front of the card and monochrome text or bar codes on the back, simply create the full-color front side of the card on page 1 of the document and the monochrome back side on page 2. The printer driver will always place all odd numbered pages on the front side of the card and all even numbered pages on the back side.

3.3.5 Split 1 Set of Ribbon Panels (HDP720 only)

Select this option to automatically print full-color on the front of a card and resin black on the back of a card using either of the Full-Color YMCK or YMCKK print ribbons. Selecting this option provides the most economical means of printing a dual-sided card since a single set of ribbon panels is essentially "split" to print both the front and backsides of a card. If using a YMCK ribbon type, the front of the card is printed with the ribbon's YMC panels and the back is printed with the K panel. If using a YMCKK ribbon type, the front of the card is printed with the YMCK panels and the back is printed with the second K panel. Note that this option is automatically enabled when the YMCKK ribbon type is selected. Also, note that the Print Both Sides option is automatically enabled when this option is selected.

3.3.6 Print Back Side Only (HDP720 only)

Select this option to print only onto the backside of a card. This option allows for conveniently printing the backside of preprinted cards that also must have their magnetic stripe or smart card chip encoded. Be sure to load cards in the usual fashion. Note that when this option is selected, the Print Both Sides option is automatically disabled.

Note

When attempting to print a two-page document, if Print Back Side Only is selected, the first page of the document will print on the backside of the card. The second page of the document will then be printed on the back of a second card.

3.3.7 Rotate Front 180 Degrees

This option rotates the image on the front of the card 180 degrees when printed. This option is often used to change the position of the printed image in relation to the set location of a card's magnetic stripe or smart chip.

3.3.8 Rotate Back 180 Degrees (HDP720 only)

This option rotates the image on the back of the card 180 degrees when printed. This option is often used to change the position of the printed image in relation to the set location of a card's magnetic stripe or smart chip.

3.3.9 Disable Printing

Selecting this option disables the printing capabilities of the printer, yet still allows the printer to encode cards. This option is useful to encode or re-encode preprinted cards without wasting additional time, effort, or printing supplies. When this option is selected, no print data will be sent to the printer, while all encoding instructions will be sent according to how they are configured within the software.

3.3.10 Buffer Single Card

Select this option to force the printer's memory to buffer, or hold, only one print job at a time. **This option should be selected only if printing to multiple printers sharing print jobs over a network.** In this case, this option ensures all printers evenly share all print jobs. When this option is not selected, the printer's memory will buffer as many print jobs as it can until the printer's memory is full. This is ideal for most applications where printers are not networked together.

3.4 Image Color Tab

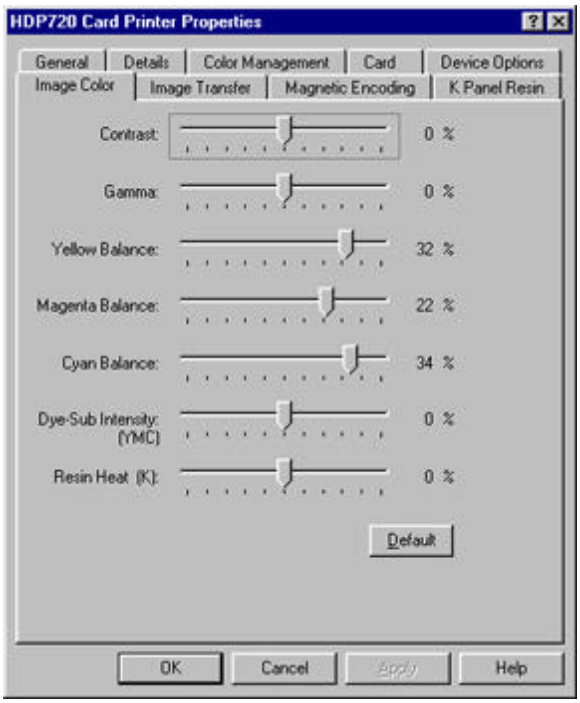


Figure 3-3

When the Algebraic color matching option is selected, this option allows control of the **Contrast** and **Gamma** of the printed image, as well as the individual color balance of **Yellow**, **Magenta**, and **Cyan.** See Figure 3-3. When the None or Monitor option is selected, only the Dye-Sub Intensity and Resin Heat sliders will display.

To control the overall darkness and lightness of the dye-sub printed image, adjust the **Dye-Sub Intensity** slide by clicking and dragging the slide's box. Moving the slide to the left causes less heat to be used in the printing process, thus generating a lighter print. Moving the slide to the right causes more heat to be used, thus generating a darker print. This slide only affects those images printed with dye-sublimation ribbon panels (YMC).

To control the amount of heat the printer uses when printing with the resin black panel, adjust the **Resin Heat** slide. Moving the slide to the left causes less heat to be used in the printing process, causing resin images to be lighter or less saturated. Moving the slide to the right causes more heat to be used, causing resin images to be darker or more saturated. This control can be helpful for fine-tuning the sharpness of resin text and bar codes.

To return all options to their factory settings, click on the **Default** button.

3.5 Image Transfer Tab

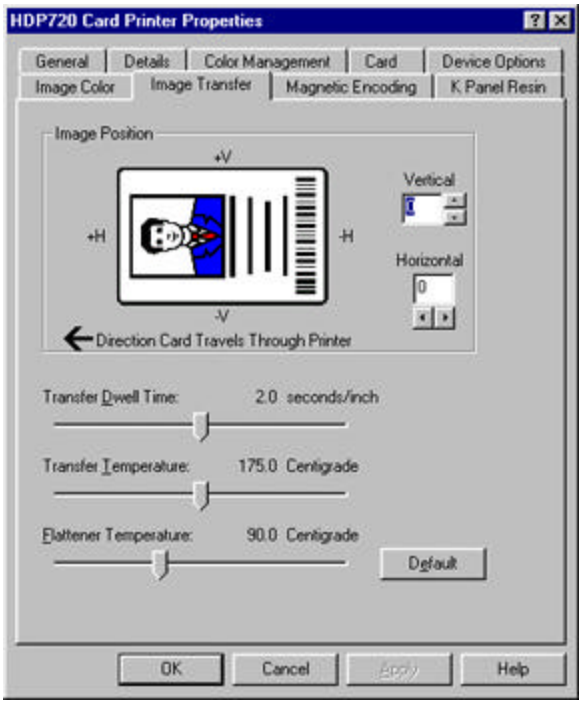


Figure 3-4

3.5.1 Image Position

The **Image Position** controls allow the position of the image on a card to be adjusted. To adjust the Image Position values, click on the Vertical and Horizontal adjustment arrows. When adjusting these values, keep in mind that cards always remain in the same position as they travel through the printer, regardless of image orientation. The Card Illustration shown in the Image Position box will flip and rotate according to selection of Portrait, Landscape, or Rotate 180 Degrees. See Figure 3-5. Note, the outline around the illustration will always remain in the same landscape orientation.

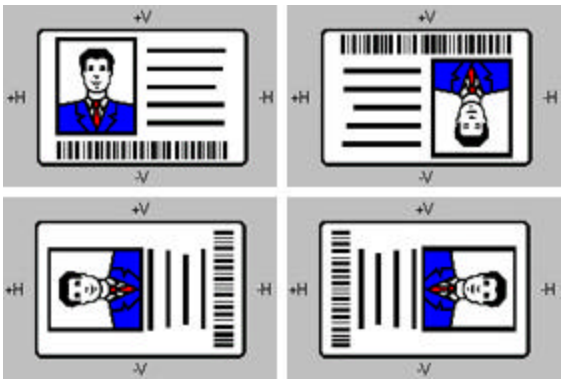


Figure 3-5

Figure 3-6 represents how the printed image will move in relation to the fixed card position as positive and negative image placement values are entered.

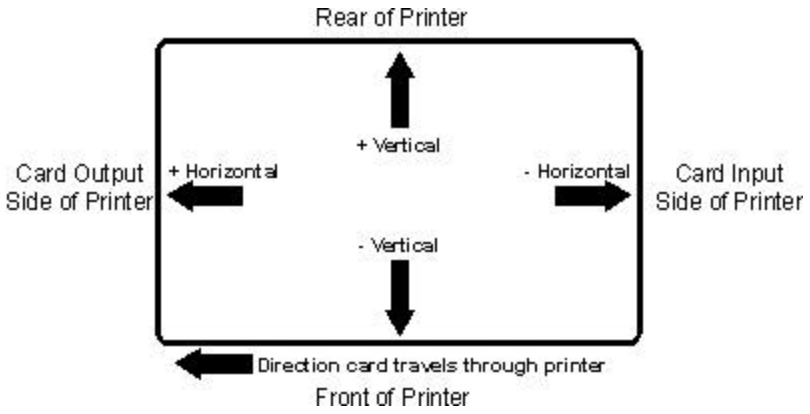


Figure 3-6

The **Vertical** adjustment moves the image toward the rear of the printer if a positive number is entered and toward the front of the printer if a negative number is entered. The **Horizontal** adjustment moves the image toward the card output side of the printer if a positive number is entered and toward the card input side of the printer if a negative number is entered. The maximum value for the Vertical and Horizontal adjustments is ±100 pixels (10 pixels = 0.03" (.8mm)).

3.5.2 Transfer Dwell Time and Temperature

The Image Transfer option also allows control of the **Transfer Dwell Time** and **Transfer Temperature**. See Figure 3-4. These settings control the speed and temperature at which printed images are transferred from the HDP Film to the card. Depending on the card type, these settings may vary. The printer driver automatically optimizes these settings according to the selection made in the **Card Type** option. Any changes made to the dwell time and temperature settings will be saved for the selected **Card Type** option upon exiting the printer driver setup in the printers control panel. To return to the factory default settings for the selected **Card Type**, click on the **Default** button. See Figure 3-4.

If using cards that differ from the **Card Type** Glossy-PVC or Matte-PVC options, select one of the **Card Type** Custom options, then adjust the dwell time and temperature settings manually to ensure proper image transfer.

To determine the appropriate settings for the card stock, set the **Transfer Dwell Time** and **Transfer Temperature** to the default settings. Then, print a card. If the HDP Film is not transferring properly, adjust these settings accordingly. Once the Film is transferring properly, perform a final durability test called the "Tape Test." For instructions on how to do a tape test, see Section 3.2.3.

3.5.3 Flattener Temperature

The **Flattener Temperature** control sets the temperature of the printer's built-in Card Flattener. Depending on the card type, this setting may vary. If using the standard UltraCard-Glossy or HDP Card-Matte PVC Card Type option, the printer driver automatically optimizes this setting according to whether printing single or dual-sided cards. In general, single-sided prints require a hotter Flattener temperature. If using another type of card stock, it may be necessary to adjust this setting to optimize the flatness of the cards. Any changes made to the Flattener temperature will be saved upon exiting the printer driver setup. To return to the factory default setting, simply click on the **Default** button. See Figure 3-4.

3.6 K Panel Resin Tab

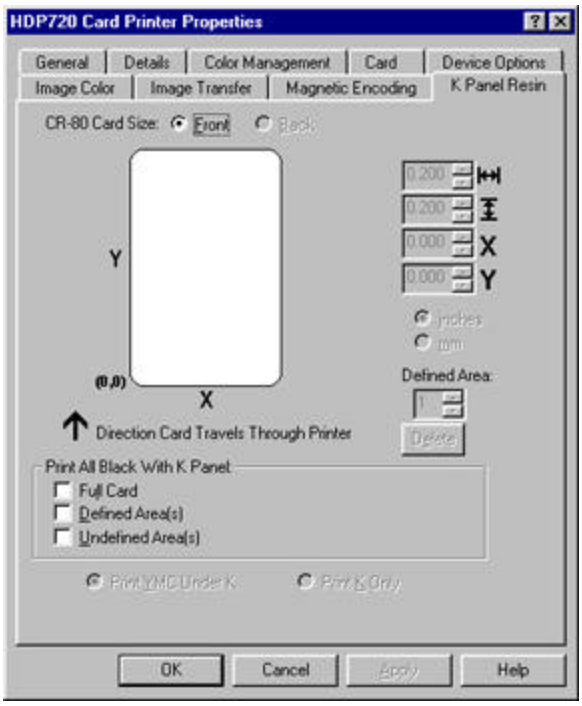


Figure 3-7

This option controls where the resin black (K) panel of a full-color ribbon is printed. Note that if printing with a ribbon type that does not have a K panel, such as the YMC ribbon type, all K Panel Resin options will be grayed out. Resin *black text* is desirable due to its sharp, saturated color, and *resin black barcodes* are required to ensure readability when scanned by an infrared barcode reader.

The printer driver will automatically print all *TrueType black text and TrueType barcodes* only with the resin black (K) panel of the print ribbon by default.

If printing black text or barcodes that are not TrueType fonts or black graphics, select one of the three options listed under "**Print All Black With K Panel**." See Figure 3-7. The printer driver will print areas of the image where it finds black coloring with the print ribbon's resin black (K) panel as specified by each of the following options:

1. Select the **Full Card** option to print the resin black (K) panel for all black found within all areas of the image. See Figure 3-8.

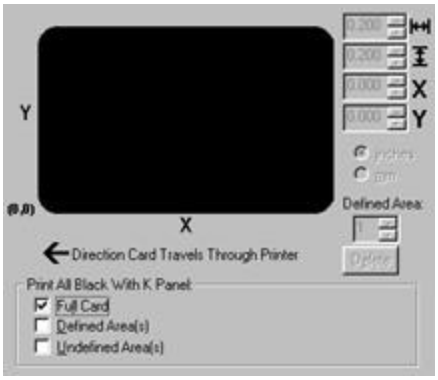


Figure 3-8

2. Select the **Defined Area(s)** option to print the resin black (K) panel for all black found only in an area or areas defined. See Figure 3-9.

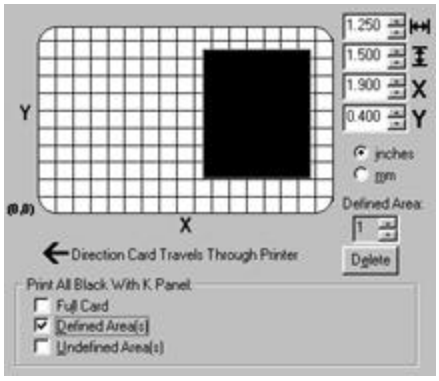


Figure 3-9

3. Select the **Undefined Area(s)** option to print the resin black (K) panel for all black found only in the space outside the areas defined. See Figure 3-10.

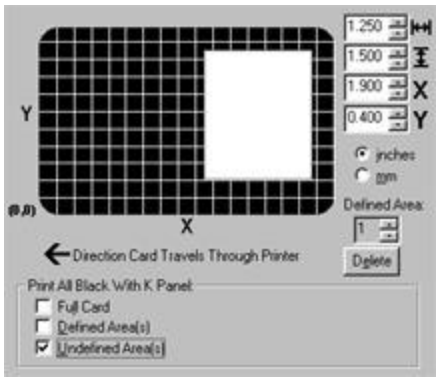


Figure 3-10

3.6.1 Defining an Area

Click on the **Defined Area(s)** check box. This will activate the card grid in the upper half of the window. It is through this card grid that up to five areas can be defined.

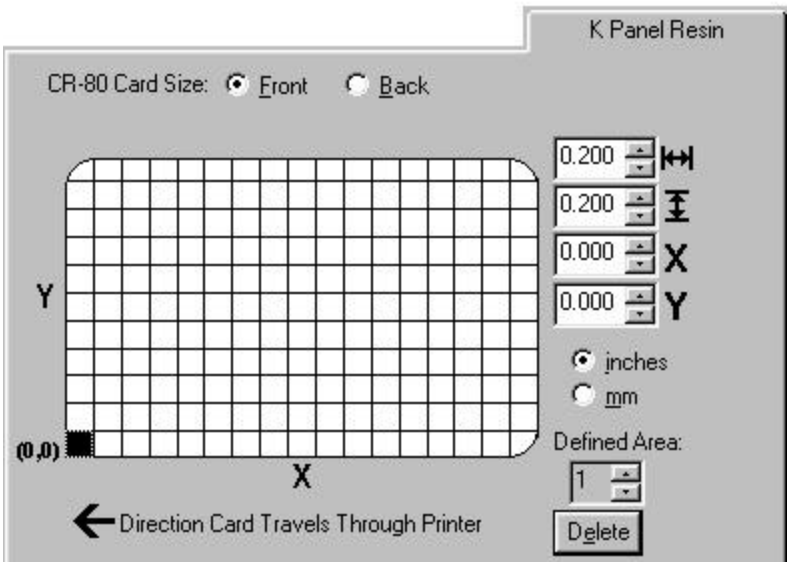


Figure 3-11

When the card grid is first activated, a small black square will appear at its default size of .2" x .2" (5mm x 5mm) and at its default location in the lower left-hand corner (0,0). This square represents the first defined area.

1. Determine the area of the card to define. In Figure 3-12, this area is indicated by the dashed outline. **The easiest way to determine the size of this area is to actually print a card, and look at it in the same orientation as when it exits the printer.** Measure the total area, and enter those dimensions into the dimension boxes. Note the minimum size an area can be is .2" x .2" (5mm x 5mm).

Figure 3-12

Once the area is sized properly, measure the location where this area is to be positioned on the card. See Figure 3-13. Measure from the lower left corner of the card up and over to the lower left corner of where the defined area is to begin, and enter these values into the X and Y boxes. See Figure 3-14. Note the card grid lines are spaced at .2" (5mm) intervals.

Figure 3-13

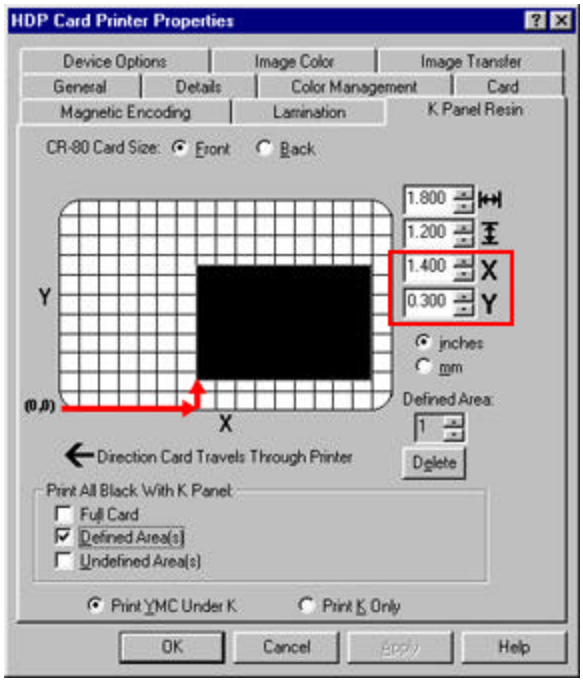


Figure 3-14

To define another area, click on the Defined Area up arrow. Another .2" x .2" (5mm x 5mm) area will appear in the lower left-hand corner. See Figure 3-15. This is the location in which all newly defined areas will first appear. Up to 5 areas can be defined. Additional areas cannot be added until the most recently created area has been moved or sized. For this reason, size and position each area as it is created. Use the Defined Area arrows to navigate back and forth from area to area. The active area will always be highlighted with a dotted outline. To delete an area, use the Defined Area arrows to select the area, and click on the Delete button. If all areas are deleted, the K Panel Resin options will automatically be deselected.

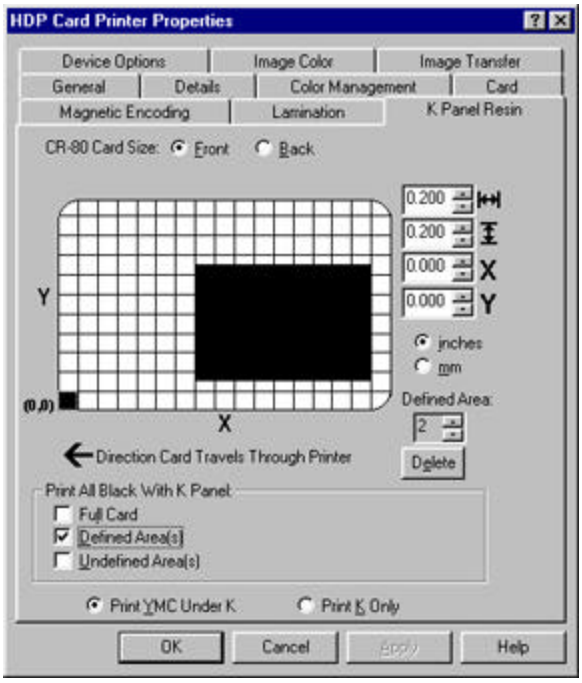


Figure 3-15

Select between the **Print YMC Under K** and **Print K Only** options. See Figure 3-15. When the **Print YMC Under K** option is selected, all black in the designated areas will print with the Yellow (Y), Magenta (M), and Cyan (C) ribbon panels directly beneath the resin black (K) panel. Select this option if printing resin black text or barcodes onto a colored background to provide a more gradual transition between the two.

When the **Print K Only** option is selected, all black in the designated areas will print only with the resin black (K) panel. Select this option if printing resin black onto a white background to maximize the sharpness of printed text and barcodes.

3.7 Magnetic Encoding Tab

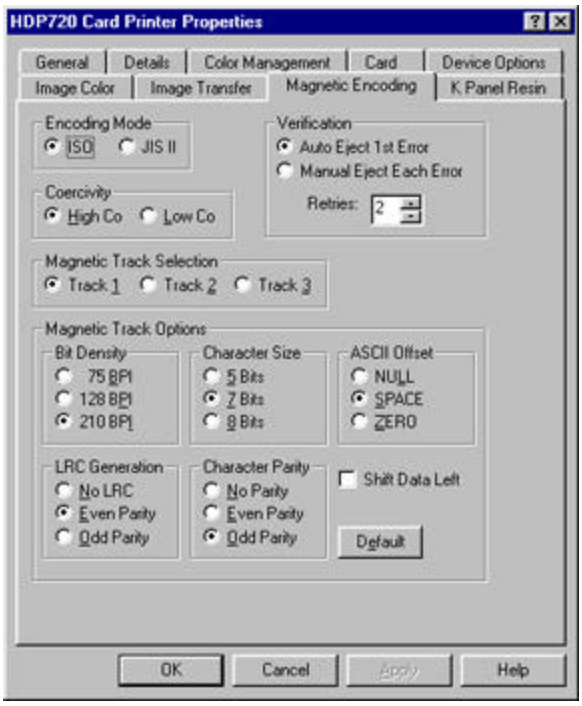


Figure 3-16

These options only apply if the printer has an optional Magnetic Stripe Encoding Module installed. Select this tab to display options for controlling the magnetic stripe encoding process. The following describes these options and the printer's magnetic encoding process.

3.7.1 Overview

The HDP Card Printer can be purchased with one of two types of factory-installed Magnetic Stripe Encoding Modules. The first, most common type is an ISO Standard encoding module with a dual-coercivity (high or low) encoding head. The second is a JIS II Standard encoding module commonly used in Japan.

By default, the printer driver is set to encode according to ISO standards onto high-coercivity magnetic stripes. To change the encoding mode, coercivity setting, or to modify the ISO standards for tracks 1, 2, and 3, modify the following Magnetic Encoding options accordingly.

3.7.2 Encoding Mode / Coercivity / Magnetic Track Selection

The **ISO** option provides encoding capability for either high- or low-coercivity cards on tracks 1, 2, and 3 and is the industry's standard mode of magnetic encoding. Use the **Coercivity** option to select the type of magnetic stripe that matches your card type.

- High Coercivity = 2750-4000 Oersted (FARGO's High Coercivity UltraCards are 2750Oe)
- Low Coercivity = 300 Oersted

If the application being used requires customization of the standard ISO encoding process, use the **Magnetic Track Selection** option to specify which track is to be configured through the Magnetic Track Options.

Although the default ISO Magnetic Track Options should be correct for most applications, these options can be customized if the application requires it. Please note that all options must be changed separately for each of the three individual tracks. To set these options back to the ISO standard

settings once they have been changed, simply select the **Default** button for each of the separate tracks.

Use the Encoding Mode option to specify which magnetic encoding standard to use. The **JIS II** option provides encoding compatibility with the JIS C 6220 Type II cards commonly used in Japan. When the JIS II mode is selected, only track 2 will be encoded. Note that no encoding customization options are available with the JIS II mode.

Note:

A JIS II Magnetic Head must be installed in the printer to use any of the JIS II options in the driver.

3.7.3 Magnetic Track Options

Use these options to customize the ISO encoded data format for each of the magnetic stripe's three tracks. Remember that each track must be customized independently of the other two. Specify which of the three tracks to customize by selecting one of the three track options. After making the required selection, the Magnetic Track Options box displays the current set of customization options for the selected track.

3.7.4 Verification

This option instructs the printer to verify that all magnetic data has been correctly encoded on each card. If the **Auto Eject 1st Error** option is selected, the printer will automatically eject a card containing magnetic data that cannot be verified. Only the first misverified card will be automatically ejected. If a second consecutive card cannot be verified, the printer will signal an error and go into manual eject mode. The auto eject option is the most direct means of dealing with misverified cards, but may be undesirable if batch printing since misverified blank cards are ejected into the same stack as verified printed cards. For this reason, a **Manual Eject Each Error** option is also provided. When this option is selected, the printer will signal an error on its LCD display stating that the magnetic data could not be verified. When this occurs, press the CANCEL soft key to manually eject the misverified card.

With either of these options, the number of verification retries may be specified. A range of 1-5 retries is available. This option is helpful since magnetic stripe verification can sometimes require more than a single pass.

3.7.5 Shift Data Left

The **Shift Data Left** option is applied to all tracks when selected. This option shifts the recorded magnetic data to the left-hand side of the card's magnetic stripe. This is useful in situations that require cards to be readable with insert type readers

3.7.6 ISO Track Locations

The magnetic encoding module encodes onto tracks in accordance with an ISO 7811-2 magnetic stripe. See Figure 3-17 for track locations.

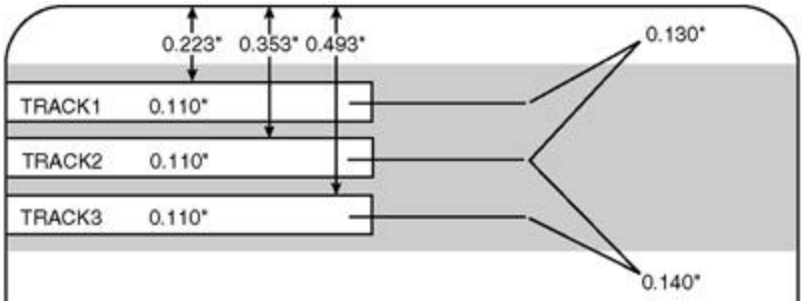


Figure 3-17

3.7.7 Sending Track Information

Magnetic track data is sent in the form of text strings from the application software to the printer driver. In order for the printer driver to differentiate between magnetic track data and the rest of the printable objects, specific characters must be added to the magnetic data to be encoded. These specify the data that is to be encoded, the tracks to encode, and mark the start and stop of the data string. In some cases, these specific characters are automatically added to the string of track data by ID software applications. In most cases, the user must manually add these characters to the string of magnetic track data. If these characters are not added to the track data, the text intended for the magnetic track will appear as printed text on the card. To avoid this, track information must be entered as follows.

When entering track data, the "~" (tilde) character is entered first, followed by the track number (1, 2, or 3) on which the data should encode. This is followed by the data to be encoded. The first character of this data string must be the track's specific Start Sentinel (SS) and the last character must be the specific End Sentinel (ES). The characters or data in between the SS and ES can include all of the valid characters specific to each track. The number of these characters, however, is limited by each track's maximum character capacity. When segmenting track data, the appropriate Field Separator (FS) must be used. Table 3-3 shows the SS, ES, FS, and the valid characters defined for each track.

Sample String

Track 1: ~1%JULIEANDERSON^1234567890?

Track 2: ~2;1234567890987654321?

Track 3: ~3;1234567890987654321?

Table 3-2

	Start Sentinel	End Sentinel	Field Separator	Valid Characters	Maximum Number of Characters
Track 1	%	?	^	ASCII 32-95 (See Table 3-3)	78
Track 2	;	?	=	ASCII 48-63 (See Table 3-3)	39
Track 3	;	?	=	ASCII 48-63 (See Table 3-3)	106

Table 3-3 – ASCII Chart

ASCII Value	Output Character	ASCII Value	Output Character	ASCII Value	Output Character	ASCII Value	Output Character
32	Space	55	7	78	N	101	e
33	!	56	8	79	O	102	f
34	"	57	9	80	P	103	g
35	#	58	:	81	Q	104	h
36	$	59	;	82	R	105	I
37	%	60	<	83	S	106	j
38	&	61	=	84	T	107	k
39	'	62	>	85	U	108	l
40	(	63	?	86	V	109	m
41	)	64	@	87	W	110	n
42	*	65	A	88	X	111	o
43	+	66	B	89	Y	112	p
44	,	67	C	90	Z	113	q
45	-	68	D	91	[	114	r
46	.	69	E	92	\	115	s
47	/	70	F	93	]	116	t
48	0	71	G	94	^	117	u
49	1	72	H	95	_	118	v
50	2	73	I	96	`	119	w
51	3	74	J	97	a	120	x
52	4	75	K	98	b	121	y
53	5	76	L	99	c	122	z
54	6	77	M	100	d	123	{

3.8 Card Tab

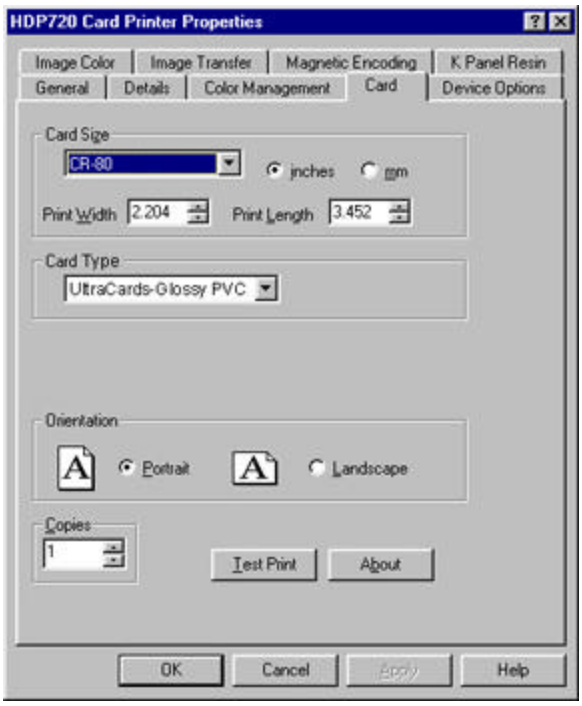


Figure 3-18

3.8.1 Card Size

Select the appropriate card size option. Three standard card sizes are available: CR-80, CR-90, and CR-100. The dimensions of the total print area for each card size will appear in the Print Width and Print Length boxes. Notice that these print area dimensions are .04" (1mm) larger than the actual card size. This is so the printer can over print images to ensure they will appear edge-to-edge when transferred to the card. For this reason, when designing a card format, always set the card size or page size within the card design program to the exact Print Length and Width dimensions listed in the printer driver.

If using a card size that varies from the CR-80, CR-90, or CR-100, select the Custom option and enter the dimensions of the card into the Print Width and Print Length boxes. Be sure to add .04" (1mm) to each dimension to ensure edge-to-edge printing.

3.8.2 Card Type

Select the appropriate card type according to the composition of the card stock. Select **UltraCards-Glossy PVC** if using FARGO UltraCard stock or any other similar card stock. Select **HDP Cards-Matte PVC** if using FARGO HDP Card stock or any other similar card stock. The printer driver uses this information to automatically determine the proper dwell time and temperature for the image transfer process. If the appropriate option is not selected, the wrong dwell time and temperature may be used during the image transfer process, which may result in poor adhesion of the HDP Film or warping of the card.

If using a card stock other than those listed, use the **Custom 1** and **Custom 2** options to save custom dwell time, dwell temperature, and Flattener temperature controls on the **Image Transfer** tab. See Figure 3-4. To do this, click on the Custom 1 or Custom 2 options and enter a name for the card stock. Then, go to the **Image Transfer** tab and adjust the dwell time and temperature sliders to the appropriate settings. These settings will be saved for the custom card type when the printer driver setup window is closed.

3.8.3 Orientation

Select either Portrait or Landscape. Selecting Portrait causes the card to print in a vertical orientation. Selecting Landscape causes the card to print in a horizontal orientation. See Figure 3-18.

3.8.4 Copies

Specifies the number of copies to be printed.

3.8.5 Test Print

This option sends a self-test print to the printer. A Full-Color YMC, YMCK, or YMCKK print ribbon must be installed. This test print procedure can be helpful in ensuring that the computer is effectively communicating with the printer, and that the printer is functioning properly.

3.8.6 About

Clicking this button opens a dialog box containing the copyright and version information about this printer driver software.

3.9 Cleaning the Printer

3.9.1 Clean the Printhead.

This should be done every time the print ribbon is changed to maintain consistent print quality.

1. Remove watches, rings, bracelets, and other jewelry.
2. Open the Print Station.
3. Use a Printhead Cleaning Pen from the Printer Cleaning Kit to firmly wipe back and forth across the surface of the Printhead. See Figure 3-19.
4. Close the Print Station once the Printhead is completely dry.

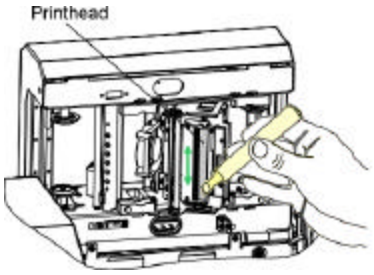


Figure 3-19

3.9.2 Clean the Platen Rollers.

1. Leave the printer power ON and open the Print and Transfer Stations.
2. Remove the print ribbon and HDP Film.
3. Locate the Print Platen Roller. See Figure 3-20.

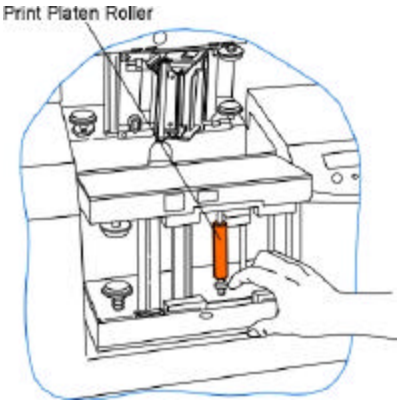


Figure 3-20

4. Use a Cleaning Pad from the Printer Cleaning Kit to wipe the roller clean.
5. Locate the Transfer Platen Roller. See Figure 3-21.

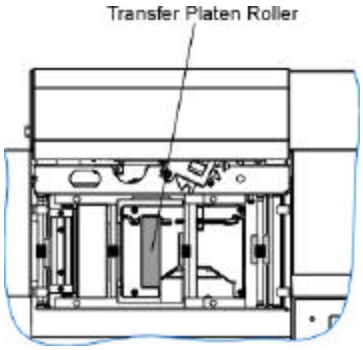


Figure 3-21

6. Use a Cleaning Pad from the Printer Cleaning Kit to wipe the roller clean. Press the FORWARD and BACK buttons to move the roller back and forth while cleaning.
7. Replace the printing supplies and close the Print and Transfer Stations after the rollers are clean and completely dry.

3.9.3 Clean the Inside of the Printer.

1. Open the Print Station and Transfer Station.
2. Remove the print ribbon and HDP Film from the printer.
3. Use a can of compressed air to blow out all visible areas of the printer interior. If you do not have a can of compressed air, use a Cleaning Pad from the Printer Cleaning Kit to wipe out all visible areas inside the printer. Remove any debris that may be inside. Be extremely careful not to let any alcohol drip inside the printer!
4. Re-install the printing supplies.
5. Close the Print and Transfer Stations.

3.9.4 Clean the Cleaning Rollers.

1. Open the Front Access Door of the printer.
2. Depress the Cleaning Roller Lock.
3. Pull the Cleaning Roller Assembly out of the printer.

4. Clean the rollers with one of the adhesive-backed Cleaning Cards from the Printer Cleaning Kit. Remove the card's adhesive backing paper and slide the card between the rollers until all dust particles are removed. See Figure 3-22. Be sure to flip the Cleaning Card over to clean both the top and bottom Cleaning Rollers. Alternatively, placing the assembly under lukewarm water may clean the Cleaning Roller. Ensure that the Cleaning Roller Assembly is completely dry before reinstalling into the printer.

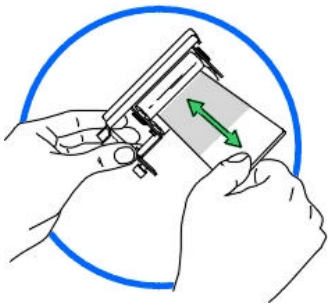


Figure 3-22

5. Once cleaned, replace the Cleaning Roller Assembly and close the Front Access Door.

Section

4

Parts Replacement

This Section guides you through the replacement of key components of the card printer. Be sure to reverse the disassembly steps to reassemble the card printer.

Safety Messages

Procedures and instructions in this Section may require special precautions to ensure the safety of the personnel performing the operations. Information that raises potential safety issues is indicated by a warning symbol (as shown to the below).

Refer to the following safety messages before performing an operation preceded by this symbol.

DANGER

Failure to follow these installation guidelines can result in death or serious injury. Always remove the power cord prior to performing repair procedures, unless otherwise specified. Make sure only qualified personnel perform these procedures.

Procedures and instructions in this Section may require special precautions to ensure the safety of the personnel performing the operations. Information that raises potential electrostatic safety issues is indicated by a warning symbol (as shown to the below).

Refer to the following safety messages before performing an operation preceded by this symbol.

CAUTION

This device is electrostatically sensitive. It may be damaged if exposed to static electricity discharges. Be sure to observe all established Electrostatic Discharge (ESD) procedures while handling cables in or near the Circuit Board and Printhead Assemblies. Always wear an appropriate personal grounding device, such as a high quality wrist strap grounded to avoid potential damage.

IMPORTANT

Always remove the HDP ribbon, HDP Film and cards from the printer before making any repairs, unless otherwise specified. Remove jewelry from hands and wash them.

Table 4-1 HDP Main Board Cable Connections

HDP Main Board-210401	Location
Spare Single Dir Driver	J19
1-2 Head Lift Motor; 3-4 Ribbon Take-up Motor; 5-6 Ribbon Supply Motor (840119)	J21
Print Stepper Motor	J24
Transfer Film Supply Motor	J20
Printhead Cable (840143)	J29
Printhead Fan	J39
Open (Factory Use Only)	J44
Open (Factory Use Only)	J45
RAM Memory (080229)	J52
Open (Factory Use Only)	J56
Spare	J57
LCD Display Panel (D840517)	J58
Power Supply (D840515)	J61
Lamination Board Power (D840516)	J62
Communications to Mag/Lamination Board	J49
RibbonTraq™ Sensor (D840509)	J65
1-4 Upper Film Encoder Sensor; 5-8 Upper Film Sensor (840111)	J66
Lamination Fan 1 (840119)	J67
Open (Factory Use Only)	J68
Spare	J69
Serial Communication Port	J70
1-4 Ribbon Supply Encoder; 5-8 Print Head Position Sensor; 9-12 Top Cover Sensor (840113)	J64

Table 4-2 HDP Lamination Board Cable Connections

HDP Lamination Board-210402	Location
Spare DC	J19
Lamination Roller Thermocouple	J35
Flattener Thermocouple	J70
Lamination Fan 2	J40
Communications to the Print Board	J51
DC Bi-Dir Spare	J52
1-4 Flipper/Encoding Card Feed Stepper Motor; 5-8 Flipper Table Rotation Stepper Motor; 9-10 Card Feed Motor (840120)	J53
Open (Factory Use Only)	J56
Flipper Table Sensor (D840687)	J58
Flattener Fan (D840688)	J60
Laminate and Flattener Heater (840116)	J61
1-4 Card Position Sensor; 5-8 Dancer Down Sensor; 9-12 Dancer Up Sensor (840110)	J62
5-8 Stacker Lift Sensor; 9-12 Stacker Full Sensor (840115)	J63
1-4 Card Input Sensor; 5-8 Flipper Table Home Sensor; 9-12 Cards Low Sensor; 13-16 Encoder Card Sensor (840114)	J64
1-4 Film Take-up Encoder Sensor; 5-8 Lower Film Sensor; 11-12 Transfer Lift Sensor (840112)	J65
1-2 Lam Lift Motor; 3-4 Film Take-up Sensor (840118)	J66
DC Output Hopper	J67
Laminator Stepper (840122)	J68
Power From Print Board	J56
Magnetics Daughter Board Connector	JP1

4.1 Removing the Covers

A cover, or a combination of covers, will need to be removed to access the part(s) to be replaced.

4.1.1 Print Station Cover

Refer To Drawing 840155

Tools Needed

Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.

4.1.2 Front Transfer Cover

Refer To Drawing 840155

Tools Needed

Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Cover.
7. Lift off the Front Cover.

4.1.3 Rear Transfer Cover

Refer To Drawing 840152

Tools Needed

Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.

6. Remove the screws (F000169) from the Rear Transfer Cover.
7. Lift off the Rear Transfer Cover.

4.1.4 Base Module Cover

Refer To Drawing 840155

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Transfer Station Cover.
7. Lift off the Front Transfer Station Cover.
8. Remove the two screws (F000034) from the bottom of the Base Module Cover.
9. Open the Front Access Door of the Card Input Hopper and the Card Output Hopper Door.

NOTE

If the printer is equipped with an Output Stacker, the entire Card Output Hopper Cover will need to be removed as described in Section 4.1.6.

10. Remove the screws (F000169) from each side of the Base Module Cover.
11. Rotate the Transfer Station to a 45° angle.
12. Pull the Base Module Cover carefully up and out of the printer.

4.1.5 Card Input Hopper Cover

Refer To Drawing 840155

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403). See Drawing 840168.
4. Remove the six screws from the bottom edge of the Card Input Hopper Cover and the three screws from the inside edge of the cover (on the right side) of the printer.
5. Lift the Card Input Hopper Cover off of the printer.

4.1.6 Card Output Hopper Cover

Refer To Drawing 840155

Tools Needed

Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the six screws from the bottom edge of the Card Input Hopper Cover and the three screws from the inside edge of the cover (on the right side) of the printer.
3. Lift the Card Output Hopper Cover off of the printer.

4.1.7 Back Cover

Refer To Drawing 840161

Tools Needed

Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the five screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.

4.2 Replacing the Control Panel Assembly Components

Follow the procedures in this Section to replace the Control Panel Assembly components: SmartGuard Ribbon Cable (24000111), SmartGuard PCB Assembly (140311), and the HD7XX User Interface Board Assembly (140403).

Refer To Drawing 840168

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Turn the Card Input Hopper Cover on its side.
7. Disconnect the SmartGuard Ribbon Cable (24000111) from the SmartGuard PCB Assembly (140311).
8. Remove the five screws (F000176) that secure the Control Panel Bezel to the Card Input Hopper Cover.

Note:

Stop here if only the SmartGuard Ribbon Cable is being replaced; attach the new SmartGuard™ Ribbon Cable to the SmartGuard PCB Assembly and the HD7XXX User Interface Board Assembly.

Continue with step 9 to replace the SmartGuard Assembly or the HD7XX User Interface Board Assembly.

9. Remove the two screws (F000170) that attach the SmartGuard PCB Assembly to the HD7XX User Interface Board Assembly.
10. Remove the SmartGuard PCB Assembly from the HD7XX User Interface Board Assembly.

Note:

Stop here if only the SmartGuard PCB Assembly (140311) is being replaced; attach the new SmartGuard PCB Assembly to the HD7XXX User Interface Board Assembly.

Continue with step 11 to replace the HD7XX User Interface Board Assembly.

11. Remove the four screws that attach the HD7XX User Interface Board Assembly to the Control Panel Bezel.
12. Remove the HD7XX User Interface Board Assembly.

4.3 Replacing the Printhead Assembly Components

Follow the procedures in this Section to replace the Printhead Assembly components.

4.3.1 Printhead (D840854)

Refer To Drawing 840160

Tools Needed

None

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Stand at the front of the printer and locate the tab on the back right of the Printhead.
6. Push up on the tab to disengage the Printhead.
7. Disconnect the two sets of cables on the back of the Printhead. *Carefully use a standard screwdriver if necessary for leverage.*
8. Reconnect the two white cables attached to the new Printhead.
9. Install the new Printhead in the printer.

NOTE

Be sure the Printhead can move freely. If it does not, the cable may be tied up too high; adjust it so the Printhead moves freely.

10. Locate the Printhead Setting Number on the Printhead. *The number reads **R=XXXX**. Be sure to record this number for later use.*
11. Enter this number into the **Printhead Resistance** option of the **Printer Setup** menu of the LCD; if this number is not entered, the printer will generate a Head Resistance Error when it is turned ON. See **Printhead Resistance** in Section 7.3.20 for detailed steps.

4.3.2 Fan Assembly (840134)

Refer To Drawing 840160

Tools Needed

Short-handle Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.

7. Lift the Print Station Cover off of the printer.
8. Remove the two screws (F000169) that secure the Fan to the printer.
9. Unplug the cable connector.
10. Take the Fan Assembly from the printer.

4.3.3 Head Force Spring — 2 (840272)

Refer To Drawing 840160

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Stand at the front of the printer and locate the tab on the back right of the Printhead (220252).
9. Push up on the tab and remove the Printhead.
10. Use a Torx T-10 screwdriver to remove the screw (F000172) from the Head Force Spring.
11. Remove the Head Force Spring from the printer.

4.3.4 Ribbon Deflector (D840638)

Refer To Drawing 840160

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the two screws (F000170).
6. Remove the Ribbon Deflector from the printer.

4.4 Replacing the Print Station Components

Follow the procedures in this Section to replace the Print Station components.

4.4.1 O-Rings (140212)

Headlift Drive O-Ring

Refer To Drawing 840153

Tools Needed

Phillips-head Screwdriver, Small Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Use the small standard screwdriver to remove the Retaining Ring (140061) from the Pulley Gear Combo (760287).
9. Slide the Pulley Gear Combo from the shaft.
10. Remove the O-Ring.

Ribbon Drive O-Ring Behind the Encoder Wheel (810492)

Refer To Drawing 840153

Tools Needed

Phillips-head Screwdriver, Small Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Use the standard screwdriver to take the Retainer Clip (897144) from the Encoder Wheel (810492).
9. Remove the Washer (130997) from the Encoder Wheel.

10. Slide the Encoder Wheel gently off of the shaft.
11. Use the small standard screwdriver to remove the Retaining Ring (140061) from the Pulley Gear Combo (760287).
12. Slide the Pulley Gear Combo from the shaft.
13. Remove the O-Ring.

4.4.2 Ribbon Sensor Board Assembly (140407)

Refer To Drawing 840153

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Remove the two screws (130971) from the Sensor Board.
9. Disconnect the cable from the Sensor Board.
10. Remove the Sensor Board from the printer.

4.4.3 Encoder Wheel (810492)

Refer To Drawing 840153

Tools Needed

Phillips-head Screwdriver, Small Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Use the standard screwdriver to take the Retainer Clip (897144) from the Encoder Wheel.
9. Remove the Washer (130997) from the Encoder Wheel.

4.4.4 Ribbon Sensor Array Assembly (840108)

Refer To Drawing 840153

Tools Needed

Phillips-head Screwdriver, Small Standard Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Use the small standard screwdriver to remove the Retaining Ring (140061) from the Ribbon Transfer Roller (840318) to allow for clearance.
9. Remove the screws (F000190) from each end of the Ribbon Sensor Array.
10. Remove the screws (F000190) from the top sides of the four 1x1 Cross Members (840239).
11. Take the Ribbon Sensor Array Assembly from the printer.
12. Disconnect the cable connector from the Ribbon Sensor Array Board.

4.4.5 Ribbon Supply Motor Assembly (D840980)

Refer To Drawing 840153

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Stand at the back of the printer and Remove the two screws (F000169) that secure the Ribbon Supply Motor Assembly.
9. Disconnect the cable connector.

4.4.6 Ribbon Take-Up Motor Assembly (D840980)

Refer To Drawing 840153

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Stand at the back of the printer and remove the two screws (F000172) that secure the Ribbon Take-Up Motor Assembly.
9. Disconnect the cable connector.

4.4.7 Headlift Motor Assembly (840131)

Refer To Drawing 840153

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Stand at the back of the printer and Remove the two screws (F000169) that secure the Headlift Motor Assembly.
9. Disconnect the cable connector.
10. Feed the cable out through the access hole.

4.4.8 Ribbon Supply Encoder Sensor Assembly (D840982)

Refer To Drawing 840153

Tools Needed

Small Standard Screwdriver, Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Use the small standard screwdriver to remove the Retainer Clip (897144) from the Encoder Wheel (810492).
9. Take the Washer (130997) from the Encoder Wheel (810492).
10. Guide the Encoder Wheel (810492) gently off of the shaft.
11. Remove the two screws (F000172) from the Ribbon Supply Encoder Sensor Assembly.
12. Disconnect the cable connector.
13. Remove the Ribbon Encoder Sensor Assembly.

4.4.9 Headlift Sensor Assembly (D840983)

Refer To Drawing 840153

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Remove the four screws (F000034) from the Print Station Cover of the printer.
6. Lower the Print Station back into position.
7. Lift the Print Station Cover off of the printer.
8. Remove the two screws (F000169) that secure the Headlift Sensor Assembly.
9. Disconnect the cable connector.
10. Feed the cable out through the access hole.

4.5 Replacing the Transfer Station Components

4.5.1 Film Drive O-Rings (140212)

Refer To Drawing 840152

Tools Needed

Phillips-head Screwdriver, 1.5 mm Allen Wrench, Small Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Rotate the Transfer Station outward.
6. Remove the two screws (F000169) from the Rear Transfer Cover.
7. Lift off the Rear Transfer Cover.
8. Loosen the setscrew on the blue hand wheel and lift the wheel off.
9. Take the washer (130997) from the Encoder Wheel (810492).
10. Guide the Encoder Wheel (810492) gently off of the shaft.
11. Use the small standard screwdriver to remove the retaining ring (140061) from the gear (760288).
12. Slide the gear (760288) from the shaft.
13. Remove the O-ring.

4.5.2 Encoder Wheel — 2 (810492)

Refer To Drawing 840152

Tools Needed

Torx T-10 Screwdriver, Small Standard Screwdriver, 1.5mm Allen Wrench

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Rotate the Transfer Station outward.
6. Remove the two screws (F000169) from the Rear Transfer Cover and lift off the Rear Transfer Cover.
7. Loosen the set screw on the blue hand wheel and lift the wheel off.
8. Remove the Washer (130997) from the Encoder Wheel.

9. Slide the Encoder Wheel gently off of the shaft. Be sure the new Encoder Wheel sits straight on the shaft and does not rub against the optical sensor.

4.5.3 Stepper Motor Assembly (840123)

Refer To Drawing 840152

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Rotate the Transfer Station outward.
6. Remove the two screws (F000169) from the Rear Transfer Cover.
7. Lift off the Rear Transfer Cover.
8. Disconnect the cable connector.
9. Loosen the two screws that secure the belt tensioner (D840864).
10. Remove the four screws (F000191) that secure the Stepper Motor.
11. Take the Stepper Motor out of the printer.

4.5.4 Lamination Supply Encoder Sensor Assembly (840135)

Refer To Drawing 840152

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Rotate the Transfer Station outward.
6. Remove the two screws (F000169) from the Rear Transfer Cover.
7. Lift off the Rear Transfer Cover.
8. Remove the two screws (F000191) from the Lamination Supply Encoder Sensor Assembly.
9. Disconnect the cable connector.
10. Remove the Lamination Supply Sensor Assembly from the printer.

4.5.5 Lamination Take-Up Encoder Sensor Assembly (840136)

Refer To Drawing 840152

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Rotate the Transfer Station outward.
6. Remove the two screws (F000169) from the Rear Transfer Cover.
7. Lift off the Rear Transfer Cover.
8. Remove the two screws (F000191) from the Lamination Take-Up Encoder Sensor Assembly.
9. Disconnect the cable connector.
10. Remove the Lamination Take-Up Encoder Sensor Assembly from the printer.

4.5.6 Lower Film Sensor Assembly (840199)

Refer To Drawing 840152

Tools Needed

Phillips-head Screwdriver, Small Standard Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000169) from the Front Cover.
7. Lift off the Front Cover.
8. Remove the two screws (F000034) from the Rear Transfer Cover.
9. Lift off the Rear Transfer Cover.
10. Use the small standard screwdriver to remove the Retaining Ring (140061) from the Transfer Ribbon Roller (840318) to allow for clearance.
11. Remove the screws (F000170) from each end of the Ribbon Sensor Array.
12. Remove the screws (F000170) from the top sides of the four 1 x 1 Cross Members (840239).
13. Take the Ribbon Sensor Array Assembly from the printer.
14. Disconnect the cable connector from the board.
15. Remove the two screws from the Ribbon Sensor Board.

4.5.7 Upper Film Sensor Assembly (D841023)

Refer To Drawing 840152

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Cover.
7. Lift off the Front Cover.
8. Remove the screw (F000191) that holds the bracket (D840122) in place.
9. Disconnect the cable connector from the board.
10. Remove the three screws (F000191) from the sensor board.

4.5.8 Print Platen Roller (840319)

Refer To Drawing 840152

Tools Needed

Phillips-head Screwdriver, Standard Screwdriver, 1.5 mm Allen Wrench

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Cover.
7. Lift off the Front Cover.
8. Remove the two screws (F000034) from the Rear Transfer Cover.
9. Lift off the Rear Transfer Cover.
10. Use the standard screwdriver to remove the Retaining Ring (140065) and Ribbon Roller Bearing (760219) from the front side of the Platen Roller.
11. Loosen the two screws that secure the belt tensioner (D840864).
12. Remove the pulley (F000006).
13. Take off the Ribbon Roller Bearings (760219) that secure the shaft to the printer frame.

NOTE

The plastic Head Location Guide (840246) and Spring (F000007) are positioned on the shaft; take care to keep track of them for installation of the new Platen Roller.

Examine the new Platen Roller to ensure that it is free from surface defects before installing it. Be sure to install the wide metal neck of the shaft at the front end of the Platen Roller. Once the new Platen Roller Assembly is installed, evacuate the mid- Section of the printer with canned air to remove dust and debris.

4.5.9 Transfer Ribbon Peel Off Bar Assembly (D840698)

Refer To Drawing 840159

Tools Needed

Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Rotate the Transfer Station outward.
6. Remove the two screws (F000191).
7. Take the Peel Off Bar out of the printer.

NOTE

From the front of the HDP Card Printer, the Peel-Off Bar on the input side should be flush with the frame; the Ribbon Peel Bar on the output side should have a 3/16-in. (4.5mm) gap between the frame and the Ribbon Peel Bar.

4.5.10 Ribbon Drive Hub — 2 (840324)

Refer To Drawing 840152

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver, Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Cover.
7. Lift off the Front Cover.
8. Remove the two screws (F000034) from the Rear Transfer Cover.

9. Lift off the Rear Transfer Cover.
10. Use the standard screwdriver to remove the Retaining Ring (140009).
11. Take off the Ribbon Driven Hub.

4.5.11 Transfer Station Assembly (840152)

Refer To Drawing 840152

Tools Needed

Phillips-head Screwdriver, Standard Screwdriver, Torx T-10 Screwdriver, Wire Cutter

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Move the Print Station up and back; bring the Transfer Station up and forward.
5. Remove the four screws (F000034) from the Front Cover; lift off the Front Cover.
6. Remove the two screws (F000034) from the Rear Transfer Cover.
7. Lift off the Rear Transfer Cover.
8. Open the Front Access Door of the Card Input Hopper.
9. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
10. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
11. Lift the Card Input Hopper Cover from the printer
12. Remove the four screws from the Card Output Hopper Cover along the base and the three screws from inside the print station.
13. Lift the Card Output Hopper Cover from the printer.
14. Ensure that the cable labels are secure and disconnect the cables.
15. Cut the brown Thermocouple wire; be sure to note the path of the wire.
16. Remove the c-clips from the hinge pins; take out the hinge pins.
17. Remove the screw from the Gas Spring (840366); take off the Washers (130283 and 140040).
18. Lift the Transfer Station Assembly carefully from the printer.

NOTE

Feed the brown Thermocouple wire of the new assembly through the first two grommet holes. Then, secure the connector end of the wire to a long-handle screwdriver. Use the screwdriver to guide the wire through the printer to the HDP Lamination Board. See Table 4-1 for connection location (J35, pins 3 and 4).

NOTE

Ensure that the Lamination Roller (of the new Transfer Station Assembly) moves up and down freely and that the cable does not hold it up.

4.5.12 Lamination Assembly (840159)

Refer to drawing 840159

Tools Required

Torx T-10 Screwdriver, Wire Cutter, 1.5 mm Allen Wrench

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Move the Print Station up and back
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Cover and lift off the Front Cover.
7. Remove the two screws (F000169) from the Rear Transfer Cover.
8. Lift off the Rear Transfer Cover.
9. Loosen the set screw on the blue hand wheel and lift the wheel off.
10. Remove the Washer (130997) from the Encoder Wheel.
11. Slide the Encoder Wheel gently off of the shaft.
12. Remove the C-clip from the idler gear and remove the idler gear.
13. Remove the C-clip from the combination pulley/gear and remove the combination pulley/gear.
14. Remove the two screws from the rear side of the Transfer module that hold the Lamination assembly.
15. Cut the wire tie on the front side of the Transfer module.
16. Remove the two screws from the front of the Transfer module that hold the Lamination assembly.
17. Cut the wire to the Thermocouple.
18. Disconnect all wires that run to the Lamination assembly.
19. Remove the Lamination assembly.

NOTE

Feed the brown Thermocouple wire of the new assembly through the first two grommet holes. Then, secure the connector end of the wire to a long-handle screwdriver. Use the screwdriver to guide the wire through the printer to the HDP Lamination Board. See Table 4-1 for connection location (J35, pins 3 and 4).

4.5.13 Transfer Lift Switch (840142)

Refer to drawing 840159

Tools Required

Torx T-10 Screwdriver, Wire Cutter, 1.5 mm Allen Wrench, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Move the Print Station up and back
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Cover
7. Lift off the Front Cover.
8. Remove the two screws (F000169) from the Rear Transfer Cover.
9. Lift off the Rear Transfer Cover.
10. Loosen the setscrew on the blue hand wheel; lift off the blue hand wheel.
11. Remove the Washer (130997) from the Encoder Wheel.
12. Slide the Encoder Wheel gently off of the shaft.
13. Remove the C-clip from the idler gear and remove the idler gear.
14. Remove the C-clip from the combination pulley/gear and remove the combination pulley/gear.
15. Remove the two screws from the rear side of the Transfer module that hold the Lamination assembly.
16. Cut the wire tie on the front side of the Transfer module.
17. Remove the two screws from the front of the Transfer module that hold the Lamination assembly.
18. Disconnect all wires that run to the Lamination assembly.
19. Remove the Lamination assembly.
20. Remove the screw (130972) that holds the Transfer Lift Switch.
21. Unplug the cable connector.

4.5.14 Transfer Lift Motor (840132)

Refer to drawing 840159

Tools Required

Torx T-10 Screwdriver, Wire Cutter, 1.5 mm Allen Wrench, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.

3. Push the Release Lever down to unlock it.
4. Move the Print Station up and back
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Cover.
7. Lift off the Front Cover.
8. Remove the two screws (F000034) from the Rear Transfer Cover.
9. Lift off the Rear Transfer Cover.
10. Remove the C-clip from the idler gear; remove the idler gear.
11. Remove the C-clip from the combination pulley/gear; remove the combination pulley/gear.
12. Remove the two screws from the rear side of the Transfer module that hold the Lamination assembly.
13. Cut the wire ties on the front side of the Transfer module.
14. Remove the two screws from the front of the Transfer module that hold the Lamination assembly.
15. Disconnect all wires that run to the Lamination assembly.
16. Remove the Lamination assembly.
17. Remove the screws (F000172) that hold the Transfer Lift Motor.
18. Disconnect the cable connector.

4.6 Replacing the Belt Driven Base Module Components

Follow the procedures in this Section to replace the Belt Driven Base Module components.

4.6.1 Drive Belt – Platen Roller to Card Feed Roller (Front) (220071)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, Phillips-head Screwdriver, 1.5 mm Allen Wrench

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Transfer Station Cover.
7. Lift off the Front Transfer Station Cover.
8. Remove the two screws (F000034) from the bottom of the Base Module Cover.
9. Open the Door of the Card Input Hopper and the Card Output Hopper Door.
10. Remove the two screws (F000034) from each side of the Base Module Cover.
11. Rotate the Transfer Station to a 45° angle.
12. Pull the Base Module Cover carefully up and out of the printer.
13. Loosen the two Allen-head screws on the middle Pulley (F000006).
14. Take the Pulley from the shaft.
15. Remove the Belt from the printer.

NOTE

Ensure that the new Belt is pulled taut and securely in place; if the Belt is not tight, the printer will not function properly.

4.6.2 Drive Belt – Card Feed Roller to Card Feed Roller (220082)

Refer To Drawing 840151

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver, 1.5 mm Allen Wrench

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.

5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Transfer Station Cover.
7. Lift off the Front Transfer Station Cover.
8. Remove the two screws (F000034) from the bottom of the Base Module Cover.
9. Open the Front Access Door of the Card Input Hopper and the Card Output Hopper Door.
10. Remove the two screws (F000172) from each side of the Base Module Cover.
11. Rotate the Transfer Station to a 45° angle.
12. Pull the Base Module Cover carefully up and out of the printer.
13. Loosen the two Allen-head screws on the middle Pulley (F000006).
14. Take the Pulley (F000006) from the shaft.
15. Remove the Belt from the printer.

NOTE

Ensure that the new Belt is pulled taut and securely in place; if the Belt is not tight, the printer will not function properly.

4.6.3 Stepper Motor Assembly (840164)

Refer To Drawing 840151

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D850208) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Remove the screw from the linkage.
9. Loosen the two screws from the belt tensioner, extend the spring and then tighten the screws on the tensioner to relax the tension on the belts.
10. Remove the belt from the stepper motor pinion.
11. Remove the three screws from the stepper motor bracket.
12. Disconnect the cable connector.
13. Remove the Stepper Motor Assembly from the printer.

4.6.4 Compound Grooved Pulley (840328)

Refer To Drawing 840151

Tools Needed

Standard Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Loosen the screws to the idler pulley.
9. Relieve tension from the belts and remove them.
10. Use the standard screwdriver to remove the Retaining Ring (140062) from the Compound Grooved Pulley.
11. Take the Pulley from the shaft.

4.6.5 Pinch Roller Spring Plate-Front -- 2 (840354)

Refer To Drawing 840151

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Transfer Station Cover.
7. Lift off the Front Transfer Station Cover.
8. Remove the two screws (F000034) from the bottom of the Base Module Cover.
9. Open the Front Access Door of the Card Input Hopper and the Card Output Hopper Door.
10. Remove the two screws (F000034) from each side of the Base Module Cover.
11. Rotate the Transfer Station to a 45° angle.
12. Pull the Base Module Cover carefully up and out of the printer.
13. Remove the screw from the Spring Plate.

14. Take the Spring Plate from the printer.

4.6.6 Pinch Roller Spring Plate-Back -- 2 (840354)

Refer To Drawing 840151

Tools Needed

Long-handled, magnetic Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Remove the screw from the Spring Plate
9. Take the Spring Plate from the printer.

4.6.7 Drive Belt-Tensioner to Platen Roller (F000003)

Refer To Drawing 840151

Tools Needed

Standard Screwdriver, Torx T-10 Screwdriver, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Loosen the two screws to the tensioner.
9. Pull the tensioner back against spring to relieve tension from the belt.
10. Remove the belt from the pulley.

NOTE

Ensure that the new Belt is pulled taut and securely in place; if the Belt is not tight, the printer will not function properly.

4.6.8 Drive Belt-Stepper Motor to Tensioner (F000004)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Loosen the two screws to the tensioner.
9. Pull the tensioner back against spring to relieve tension from the belt.
10. Remove the screw from the linkage
11. Remove the two screws from the stepper motor bracket.
12. Disconnect the cable connector.
13. Remove the Stepper Motor Assembly from the printer.
14. Take the Belt from the printer.

NOTE

Ensure that the new Belt is pulled taut and securely in place; if the Belt is not tight, the printer will not function properly.

4.6.9 Drive Pulley – Front -- 3 (D850190)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, Standard Screwdriver, 1.5mm Allen Wrench, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.

5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Transfer Station Cover.
7. Lift off the Front Transfer Station Cover.
8. Remove the two screws (F000034) from the bottom of the Base Module Cover.
9. Open the Front Access Door of the Card Input Hopper and the Card Output Hopper Door.
10. Remove the two screws (F000034) from each side of the Base Module Cover.
11. Rotate the Transfer Station to a 45° angle.
12. Pull the Base Module Cover carefully up and out of the printer.
13. Loosen the set screws on the pulleys.
14. Remove the Drive Pulleys (D850190) and belts from the shaft simultaneously.

4.6.10 Drive Pulley — Back -- 2 (D850190)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, Standard Screwdriver, 1.5mm Allen Wrench, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Loosen the two screws from the belt tensioner.
9. Pull the tensioner back against spring to relieve tension from the belt and tighten the screws to hold the tensioner in place.
10. Remove the screw from the linkage
11. Use a standard screwdriver to remove the clip from the pulley
12. Remove the belts from the pulleys.
13. Pull the Drive Pulley (D850190) from the printer.

4.6.11 Belt (F000018)

Refer To Drawing 840151

Tools Needed

1.5 mm Allen Wrench, Torx T-10 Screwdriver, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Pull the tensioner back against spring to relieve tension from the belt and tighten the screws to hold the tensioner in place.
9. Use the standard screwdriver to remove the clip from the idler drive pulley.
10. Remove the belt from the idler gear and the platen drive pulley.
11. Use the standard screwdriver to remove the clip from the platen roller shaft.
12. Take the Pulley (F000006) and the belt from the shaft.
13. Loosen the two Allen-head screws on the middle Pulley (F000006).
14. Remove the pulley from the shaft.
15. Remove the belt from the printer.

NOTE

Ensure that the new Belt is pulled taut and securely in place; if the Belt is not tight, the printer will not function properly.

4.6.12 Base Module (840151)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, Standard Screwdriver Phillips-head Screwdriver

16. Turn off the printer and unplug the power cord from the printer.
17. Remove the screws from the Back Cover of the printer.
18. Tilt the Back Cover outwards from the printer.
19. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
20. Detach the cables running to the boards.

21. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
22. Set the Back Cover carefully aside.
23. Open the Front Access Door.
24. Push the Release Lever down to unlock it.
25. Lift the Print Station up and back.
26. Remove the four screws (F000034) from the Print Station Cover of the printer.
27. Lower the Print Station back into position.
28. Lift the Print Station Cover off of the printer.
29. Lift the Print Station up and back.
30. Bring the Transfer Station up and forward.
31. Remove the four screws (F000034) from the Front Transfer Station Cover.
32. Lift off the Front Transfer Station Cover.
33. Remove the two screws (F000034) from the bottom of the Base Module Cover.
34. Remove the six screws from the bottom edge of the Card Input Hopper Cover and the three screws from the inside edge of the cover (on the right side) of the printer.
35. Detach the LCD Interface Cable (D840517) from the HD7XX User Interface Board Assembly (140403).
36. Lift the Card Input Hopper Cover off of the printer.
37. Remove the four screws from the bottom edge of the Card Output Hopper Cover and the three screws from the inside edge of the cover (on the left side) of the printer.
38. Lift the Card Output Hopper Cover off of the printer.
39. Remove the screws (F000034) from each side of the Base Module Cover.
40. Rotate the Transfer Station to a 45° angle.
41. Pull the Base Module Cover carefully up and out of the printer.
42. Remove the Print Module by removing the screws on either side of the Cross Member.
43. Spread the side plates and lift out the Print Module
44. Remove the screws from the base plate that hold the Base Module in place.
45. Lift the Base and Transfer Modules from the Printer.
46. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040) on the base module.
47. Remove the c-clips from the hinge pins; take out the hinge pins.
48. Disconnect the wires that run to the Transfer Module.

4.7 Replacing the Gear Driven Base Module Components

Follow the procedures in this Section to replace the Gear Driven Base Module components.

4.7.1 Drive Belt – Platen Roller to Card Feed Roller (220071)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, Phillips-head Screwdriver, Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Transfer Station Cover.
7. Lift off the Front Transfer Station Cover.
8. Remove the two screws (F000034) from the bottom of the Base Module Cover.
9. Open the Front Access Door of the Card Input Hopper and the Card Output Hopper Door.
10. Remove the two screws (F000034) from each side of the Base Module Cover.
11. Rotate the Transfer Station to a 45° angle.
12. Pull the Base Module Cover carefully up and out of the printer.
13. Use the standard screwdriver to remove the push-on clips from all of the pulleys.
14. Remove the pulleys and belt that connects the card feed rollers.
15. Remove the pulleys and belt from the printer.

NOTE

Ensure that the new Belt is pulled taut and securely in place; if the Belt is not tight, the printer will not function properly.

4.7.2 Drive Belt – Card Feed Roller to Card Feed Roller (220082)

Refer To Drawing 840151

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver, Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.

4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Transfer Station Cover.
7. Lift off the Front Transfer Station Cover.
8. Remove the two screws (F000034) from the bottom of the Base Module Cover.
9. Open the Front Access Door of the Card Input Hopper and the Card Output Hopper Door.
10. Remove the two screws (F000034) from each side of the Base Module Cover.
11. Rotate the Transfer Station to a 45° angle.
12. Pull the Base Module Cover carefully up and out of the printer.
13. Use the standard screwdriver to remove the push-on clips from the pulleys.
14. Remove the pulleys and belt that connects the card feed rollers.

NOTE

Ensure that the new Belt is pulled taut and securely in place; if the Belt is not tight, the printer will not function properly.

4.7.3 Stepper Motor Assembly (840164)

Refer To Drawing 840151

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D850208) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Remove the screw from the linkage.
9. Remove the two screws from the stepper motor bracket.
10. Disconnect the cable connector.
11. Remove the Stepper Motor Assembly from the printer.

4.7.4 Pinch Roller Spring Plate-Front Input Side (840354)

Refer To Drawing 840151

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver, 1.5mm Allen Wrench

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Transfer Station Cover.
7. Lift off the Front Transfer Station Cover.
8. Remove the two screws (F000034) from the bottom of the Base Module Cover.
9. Open the Front Access Door of the Card Input Hopper and the Card Output Hopper Door.
10. Remove the two screws (F000034) from each side of the Base Module Cover.
11. Rotate the Transfer Station to a 45° angle.
12. Pull the Base Module Cover carefully up and out of the printer.
13. Remove the screw from the Spring Plate.
14. Take the Spring Plate from the printer.

4.7.5 Pinch Roller Spring Plate-Front Output Side (840354)

Refer To Drawing 840151

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Push the Release Lever down to unlock it.
4. Lift the Print Station up and back.
5. Bring the Transfer Station up and forward.
6. Remove the four screws (F000034) from the Front Transfer Station Cover.
7. Lift off the Front Transfer Station Cover.
8. Remove the two screws (F000034) from the bottom of the Base Module Cover.
9. Open the Front Access Door of the Card Input Hopper and the Card Output Hopper Door.
10. Remove the two screws (F000034) from each side of the Base Module Cover.
11. Rotate the Transfer Station to a 45° angle.

12. Pull the Base Module Cover carefully up and out of the printer.
13. Remove the screw from the Spring Plate.
14. Take the Spring Plate from the printer.

4.7.6 Pinch Roller Spring Plate-Back Input Side (840354)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Remove the screw from the Spring Plate.
9. Take the Spring Plate from the printer.

4.7.7 Pinch Roller Spring Plate-Back Output Side (840354)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, 1.5mm Allen Wrench

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Remove the screw from the Spring Plate.
9. Take the Spring Plate from the printer.

4.7.8 Drive Pulley — Back -- 2 (D850190)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Use the standard screwdriver to hold back the locking tab on the drive gear while pulling it from the shaft.
9. Use the standard screwdriver to remove the retaining clip
10. Pull the Drive Pulley (D850190) from the printer.

4.7.9 Gear - Card Transport --2 (760330)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Use the standard screwdriver to hold back the locking tab on the drive gear while pulling it from the shaft.
9. Remove the gear from the printer.

4.7.10 Compound Gear (D841032)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the board.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Remove the screw from the linkage.
9. Use the standard screwdriver to hold back the locking tab on the drive gear while pulling it from the shaft.
10. Remove the gear from the printer
11. Remove the two screws from the stepper motor bracket.
12. Disconnect the cable connector.
13. Remove the Stepper Motor Assembly from the printer.
14. Use the standard screwdriver to remove the retaining clip.
15. Pull the Drive Gear from the printer.

4.7.11 Base Module (840151)

Refer To Drawing 840151

Tools Needed

Torx T-10 Screwdriver, Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the four screws that secure the Rear Bracket (D840585) to the printer.
5. Detach the cables running to the boards.
6. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040).
7. Set the Back Cover carefully aside.
8. Open the Front Access Door.

9. Push the Release Lever down to unlock it.
10. Lift the Print Station up and back.
11. Remove the four screws (F000034) from the Print Station Cover of the printer.
12. Lower the Print Station back into position.
13. Lift the Print Station Cover off of the printer.
14. Lift the Print Station up and back.
15. Bring the Transfer Station up and forward.
16. Remove the four screws (F000034) from the Front Transfer Station Cover.
17. Lift off the Front Transfer Station Cover.
18. Remove the two screws (F000034) from the bottom of the Base Module Cover.
19. Remove the six screws from the bottom edge of the Card Input Hopper Cover and the three screws from the inside edge of the cover (on the right side) of the printer.
20. Detach the LCD Interface Cable (D840517) from the HD7XX User Interface Board Assembly (140403).
21. Lift the Card Input Hopper Cover off of the printer.
22. Remove the four screws from the bottom edge of the Card Output Hopper Cover and the three screws from the inside edge of the cover (on the left side) of the printer.
23. Lift the Card Output Hopper Cover off of the printer.
24. Remove the screws (F000034) from each side of the Base Module Cover.
25. Rotate the Transfer Station to a 45° angle.
26. Pull the Base Module Cover carefully up and out of the printer.
27. Remove the Print Module by removing the screws on either side of the Cross Member.
28. Spread the side plates and lift out the Print Module
29. Remove the screws from the base plate that hold the Base Module in place.
30. Lift the Base and Transfer Modules from the Printer.
31. Remove the screw from the Gas Spring (840366) and take off the Washers (130283 and 140040) on the base module.
32. Remove the c-clips from the hinge pins; take out the hinge pins.
33. Disconnect the wires that run to the Transfer Module.

4.8 Replacing the Card Input Hopper Components

Follow the procedures in this Section to replace the Card Input Hopper components.

4.8.1 Flipper Table Sensor Board Assembly (140407)

Refer To Drawing 840156

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Remove the three screws that secure the pulley cover and remove.
7. Remove the two screws (F000169) that secure the Flipper Table Home Sensor.
8. Disconnect the Flipper Table Home Sensor Cable.

4.8.2 Card Low Sensor Board Assembly (140407)

Refer To Drawing 840156

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Remove the three screws that secure the hopper side plate (840217).
7. Remove the three screws from the Pillow Block assembly (0840684) and pull the assembly towards the back of the printer until free.
8. Remove the hopper side plate from the printer.
9. Remove the two screws (F000169) that secure the Card Low Sensor.
10. Disconnect the Card Low Sensor Cable.

4.8.3 Card Feed Belt (220082)

Refer To Drawing 840156

Tools Needed

Phillips-head Screwdriver, Small Standard Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Remove C-clip from the one-way pulley (840215)
7. Slip the Belt off of the Card Feed Pulley (840212).
8. Remove the pulley (840215) from the shaft

4.8.4 Cleaning Roller Drive Idler Gear — 2 (760401)

Refer To Drawing 840156

Tools Needed

Phillips-head Screwdriver, Small Standard Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Remove the screws from the Back Cover of the printer.
7. Tilt the Back Cover outwards from the printer.
8. Remove the screws from the back plate and move it far enough to allow access to the back of the hopper assembly.
9. Use the small standard screwdriver to remove the Retaining Ring (140062) from the Idler Gear.
10. Slide the Idler Gear from the shaft.

4.8.5 Card Feed Gear — 3 (810271)

Card Feed Gear on the Flipper Table / Encoder Feed Motor (840100)

Refer To Drawing 840156

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver, 1.5mm Allen Wrench

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws of the printer.
5. Lift the Card Input Hopper Cover off of the printer.
6. Remove the cover from the Encoder Feed Motor.
7. Loosen the three screws (130315) from the belt tensioner.
8. Remove the pulley in front of the Card Feed Shaft Gear.
9. Slide the Card Feed Gear from the shaft.

Card Feed Gear on the Card Feed Motor Assembly (840198)

Refer To Drawing 84015

Tools Needed

Small Standard Screwdriver, Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Use the small standard screwdriver to remove the Retaining Ring (140062) from the Card Feed Shaft Gear.
7. Remove the three screws (130315) from the Card Feed Motor Assembly.
8. Lift the Card Feed Motor Assembly from the printer.
9. Slide the Card Feed Gear from the shaft.

Replacing the Card Feed Shaft Gear on the Cleaning Roller Assembly (840102)

Refer To Drawing 840156

Tools Needed

Phillips-head Screwdriver, Snap-Ring Tool, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws (on the right side) of the printer.
5. Lift the Card Input Hopper Cover off of the printer.
6. Remove the C-Ring.
7. Slide the Card Feed Shaft Gear from the shaft.

4.8.6 Encoding Feed Motor Assembly (840100)

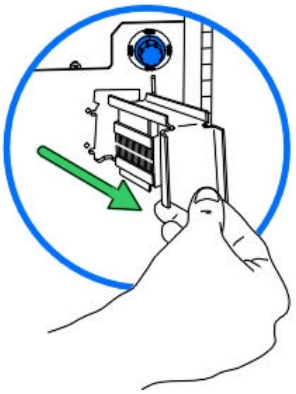
Refer To Drawing 840156

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Push the Release Lever down.
7. Remove the cover from the Encoding feed motor.
8. Remove the two screws (130315) from the Encoding Feed Motor.
9. Remove the O-ring from the Feed Motor.
10. Lift the Encoding feed motor from the printer.

4.8.7 Cleaning Roller Assembly (840102)



Refer To Drawing 840156

Tools Needed

None

1. Open the Front Access Door.
2. Press the tab on the Cleaning Roller Assembly
3. Pull the Cleaning Roller Assembly from the printer.

4.8.8 Flipper Table Position Stepper Motor (840124)

Refer To Drawing 840156

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Remove the screws from the Back Cover of the printer.
7. Tilt the Back Cover outwards from the printer.
8. Remove the screws from the back plate and move it far enough to allow access to the back of the hopper assembly.
9. Disconnect the Stepper Motor Cable connection.
10. Remove the two screws (130314) that secure the Stepper Motor.
11. Lift the Stepper Motor carefully from the printer.

4.8.9 Card Feed Motor Assembly (840198)

Refer To Drawing 840156

Tools Needed

Small Standard Screwdriver, Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).

4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws (on the right side) of the printer.
5. Lift the Card Input Hopper Cover off of the printer.
6. Use the small standard screwdriver to remove the Retaining Ring (140062) from the Card Feed Shaft Gear.
7. Remove the three screws (130315) from the Card Feed Motor Assembly.
8. Lift the Card Feed Motor Assembly from the printer.

4.8.10 Clutch Spring (840285)

Refer To Drawing 840156

Tools Needed

Phillips-head Screwdriver, Small Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Use the small standard screwdriver to remove the Retaining Ring (140062) from the one-way Pulley (840215).
7. Slide the one-way pulley from the shaft.
8. Slide the Clutch Spring (840285) from the shaft.

4.8.11 Card Sensor Assembly-Flipper Table (D840624)

Refer To Drawing 840156

Tools Needed

1.5mm Allen Wrench, Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Loosen the belt tensioner
7. Remove the pulley from the front of the printer.

8. Slide the card feed gear off the roller shaft.
9. Use the standard screwdriver to remove the retaining clip from the shaft.
10. Slide the brass bushing off the roller shaft.
11. Depress the interior bushing on the front side of the flipper table against the spring.
12. Push the flipper table towards the back of the printer.
13. Push the side of the flipper table that is towards the front of the printer downward to release it from the drive roller shaft.
14. Once the Flipper Table is clear of the roller shaft, pull it towards the front of the printer to release it from the alignment posts.
15. Remove the two screws (F000169) that secure the Sensor Assembly.
16. Disconnect the cable connector.

4.8.12 Card Feed Sensor (D840625)

Refer To Drawing 840156

Tools Needed

Phillips-head Screwdriver, Torx T-10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).
4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Remove the Cleaning Roller Assembly to allow access to the sensor assembly.
7. Remove the two screws (F000191) that secure the sensor assembly.
8. Disconnect the cable connector.

4.8.13 Magnetic Encoder Head (840104)

Refer To Drawing 840156

Tools Needed

Torx T-10 Screwdriver, Standard Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Open the Front Access Door.
3. Detach the LCD Interface Cable (D840517) from the HD7XXX User Interface Board Assembly (140403).

4. Remove the five screws from the base of the Card Input Hopper Cover and remove the other four screws from inside the print station.
5. Lift the Card Input Hopper Cover off of the printer.
6. Remove the two screws (F000191) that secure the access plate to the base of the printer.
7. Use the standard screwdriver to remove the two c-clips from the posts.
8. Remove the springs
9. Disconnect the cable connector
10. Lift the Magnetic Encoder Head from the printer.

4.8.14 Encoder Card Sensor (140407)

Refer To Drawing 840156

Tools Needed

Torx T-10 Screwdriver, 7/32 in. Nut driver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the two screws from the access panel on the underside of the baseplate.
3. Remove the two nuts that hold the sensor in place.
4. Disconnect the cable connector.

4.9 Replacing the Power Assembly Components

Follow the procedures in this Section to replace the Power Module components.

4.9.1 Power Switch (120011)

Refer To Drawing 840161

Tools Needed

Torx T-10 Screwdriver, Needle Nose Pliers, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the two screws (130314) from the Power Supply Cover.
5. Remove the Power Supply Cover.
6. Unplug the Power Supply Cable, the black wires leading into the white plug on the top of the board.
7. Use the Needle Nose Pliers to unplug the cables that run to the Power Switch and the Line Filter

NOTE

The cable connectors labeled D840511 goes to the top two connectors; cable D840512 goes to the lower two connectors for the Line Filter.

8. Depress and hold the tabs on the top and bottom of the Power Switch.
9. Push the Power Switch out of the printer.

4.9.2 Power Cord Receptacle (130067)

Refer To Drawing 840161

Tools Needed

Torx T-10 Screwdriver, Needle Nose Pliers, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the two screws (130314) from the Power Supply Cover.
5. Remove the Power Supply Cover.
6. Unplug the Power Supply Cable.
7. Use the Needle Nose Pliers to unplug the cables that run to the Line Filter (130067). Remove the Ground Screw (D840510).

8. Remove the two screws (130971) and nuts (130985) located on each side of the outside of the Power Cord Receptacle.
9. Remove the Power Cord Receptacle.

4.9.3 Main Print Board (A000030)

Refer To Drawing 840161

Tools Needed

Torx T-10 Screwdriver, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Unplug the cable connections to the Main Board.
5. Remove the five screws (F000169) that secure the Main Board to the Rear Bracket (D840585).
6. Take the Main Board from the printer.

NOTE

Refer to Table 4-1 for cable connections.

4.9.4 Lamination Board (140402)

Refer To Drawing 840161

Tools Needed

Torx T-10 Screwdriver, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Unplug the cable connections to the Lamination Board.
5. Remove the four screws (F000169) that secure the Lamination Board.
6. Lift the Lamination Board from the printer.

NOTE

Refer to Table 4-1 for cable connections.

4.9.5 Power Supply (150240)

Refer To Drawing 840161

Tools Needed

Torx T-10 Screwdriver, Phillips-head Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the screws from the Back Cover of the printer.
3. Tilt the Back Cover outwards from the printer.
4. Remove the two screws (130314) from the Power Supply Cover.
5. Unplug the Power Supply Cable, the black wires leading into the white plug on the top of the board.
6. Remove the cables from the power switch and the power plug.
7. Remove the four screws (130984) that secure the Power Supply.
8. Take the Power Supply from the printer.

4.10 Replacing the Output Stacker Components

4.10.1 Output Stacker (D840590)

Refer to Drawing D840590

Tools Needed

Phillips-head Screwdriver, Torx T10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the four screws from the bottom edge of the Card Input Hopper Cover and the three screws from the inside edge of the cover (on the left side) of the printer.
3. Lift the Card Output Hopper Cover off of the printer.
4. Remove the two screws from both sides of the Output Stacker.
5. Remove the screw from the base of the Output Stacker.
6. Disconnect the cable connectors.
7. Lift the Output Stacker from the Printer

4.10.2 Stacker Full Sensor (140407)

Refer to Drawing D840590

Tools Needed

Phillips-head Screwdriver, Torx T10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the four screws from the bottom edge of the Card Input Hopper Cover and the three screws from the inside edge of the cover (on the left side) of the printer.
3. Lift the Card Output Hopper Cover off of the printer.
4. Remove the two screws from the sensor.
5. Disconnect the cable connector.

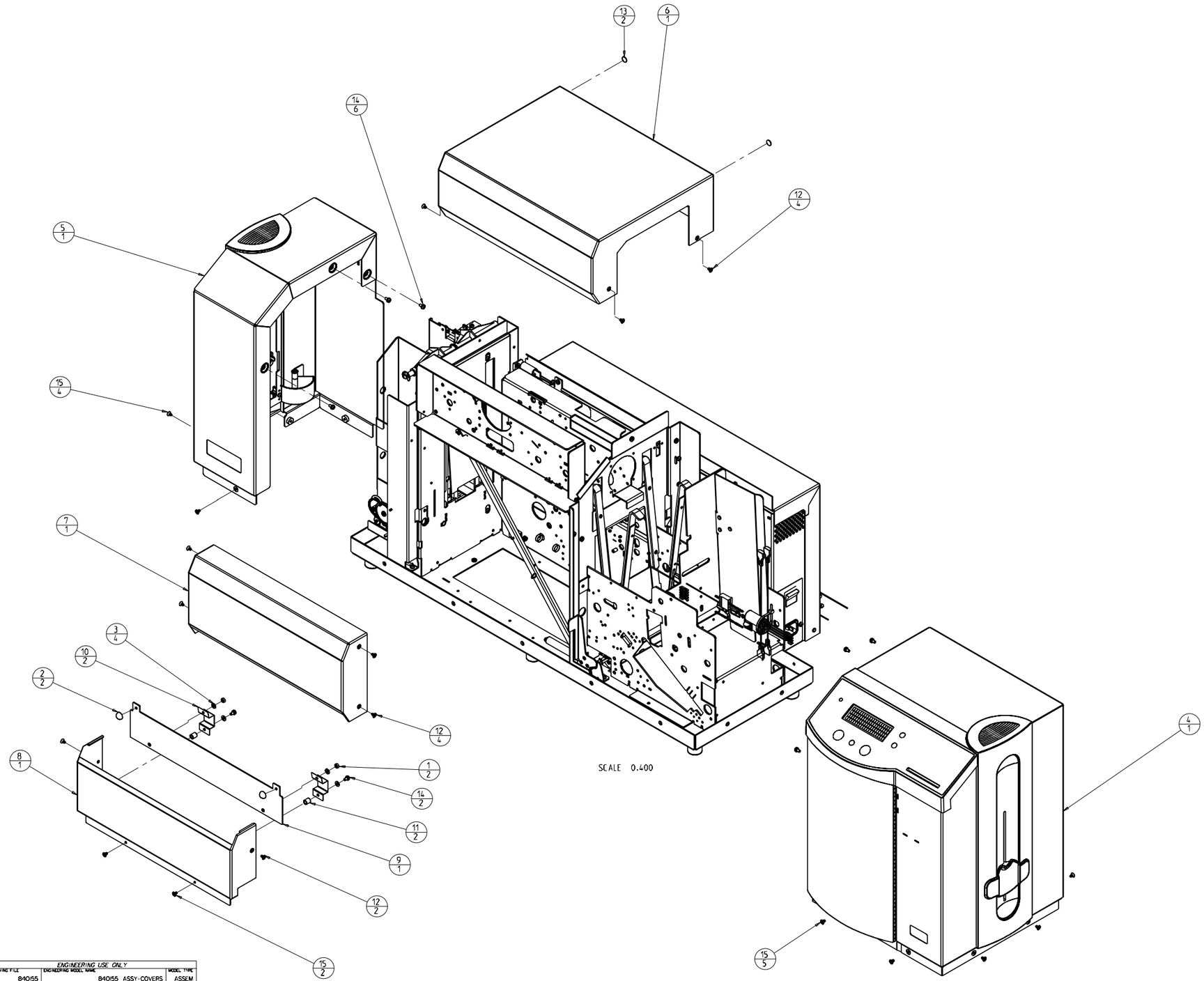
4.10.3 Stacker Lift Motor (840130)

Refer to Drawing D840590

Tools Needed

Phillips-head Screwdriver, Torx T10 Screwdriver

1. Turn off the printer and unplug the power cord from the printer.
2. Remove the four screws from the bottom edge of the Card Input Hopper Cover and the three screws from the inside edge of the cover (on the left side) of the printer.
3. Lift the Card Output Hopper Cover off of the printer.
4. Remove the o-ring from the motor.
5. Remove the two screws that hold the motor in place.
6. Disconnect the wires from the Stacker Lift Motor.
7. Lift the motor from the printer.



ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	2	130985	PART	NUT - M3 X 0.5 KEPS CZ
2	2	140021	PART	FOOT-RUBBER BUMPER .2X.44 IN DIA
3	4	140040	PART	WASHER 3MM FLAT
4	1	840167	ASSEMBLY	ASSY-INPUT-COVERS
5	1	840169	ASSEMBLY	ASSY- OUTPUT COVERS
6	1	840361	PART	COVER-TOP TOWER
7	1	840362	PART	COVER-MID_TOWER
8	1	840363	PART	COVER-BASE TOWER
9	1	0840501	ASSEMBLY	COVER-MIDDLESPAN
10	2	0840502	PART	PLATE-SPRING MID COVER
11	2	0840859	PART	SPACER- .2500 .1701D X .270
12	10	F000034	PART	SCREW-#4-40X.188 FLTHD UCUT SLF TAP
13	2	F000106	PART	BUMPER-.312 X .085 TRANSPARENT
14	8	F000169	PART	SCREW-M3X5_TPH_ZP_SEM
G 15	11	F000231	PART	SCREW-4-40X.250 UCUT-BLZP PATCH

VER	REV	RECORD	ECO#	DATE	APPR
	G	REMOVED NOTES, F000231 WAS F000035	CO2028	31-Jul-01	KB
	F	F000169 QTY 8 WAS 130971 QTY 8	CO1695	02-Oct-00	KB
	E	ADDED 140021 QTY 2	CO1616	31-AUG-00	KB
	D	ADDED 2X F000106	CO1163	6-APR-00	DJC
	C	ADDED NOTE.	CO1141	29-MAR-00	DJC
	B	ADDED 2X 0840859, 2X 130985, 4X 140040, AND REPLACED 840501 REVB WITH 840501 REVC. REMOVED 2X 130314	CO1074	14-MAR-00	DJC
	A	INITIAL RELEASE	CO0967	14-Feb-00	JS

MATERIAL | FINISH

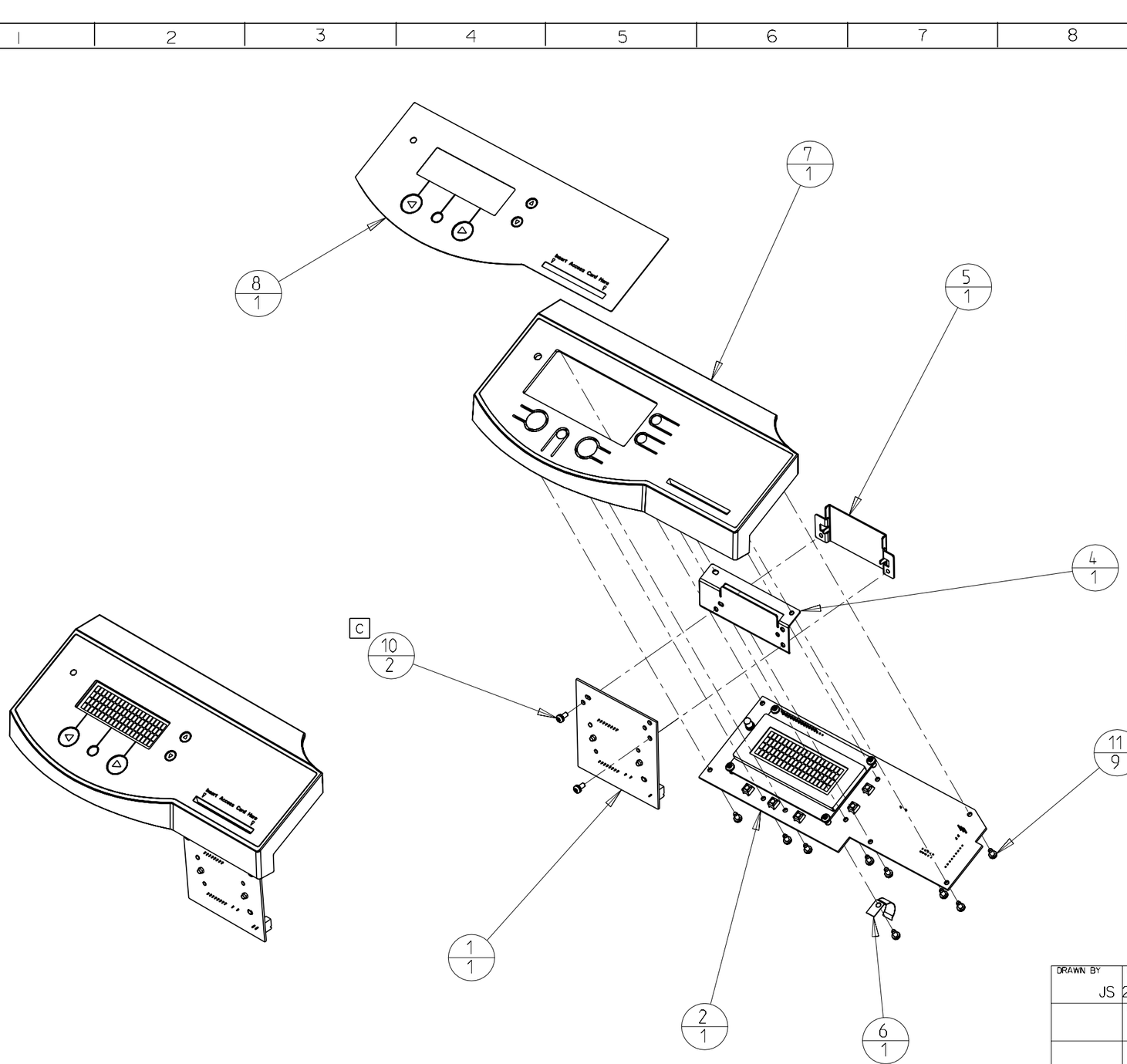
DRAWN BY: JS | DATE: 01-Jun-99 | DIM UNITS: inch | SCALE: 0.400 | SIZE: D | - | DESCRIPTION: ASSY-COVERS 1/1

FARGO ELECTRONICS, INCORPORATED

PROJECT: HD7XX | PART NUMBER: 840155 | ITEM NUMBER: 840155

ENGINEERING USE ONLY

DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
840155	840155 ASSY-COVERS	ASSEM



ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	1	140311	ASSEMBLY	PCB ASSY-SMARTLOCK
2	1	140403	ASSEMBLY	ASSY-HD7XX USER INTERFACE BRD
3	1	24000111	ASSEMBLY	ASY CBL RBN SMART LOCK
4	1	82060212	PART	BRACKET-CHIP CARD MOUNT
5	1	82060312	PART	BRACKET-CHIP CARD GUIDE
6	1	82061111	PART	GROUNDING STRIP BeCu
7	1	840341	PART	BEZEL-CONTROL PANEL
8	1	895792	PART	LABEL-CONTROL PANEL
9	1	D840517	ASSEMBLY	ASY-CABLE PRINT BOARD TO LCD
C	10	2	F000170	PART	SCREW-M3X6_TPH_ZP_SEM
C	11	9	F000176	PART	SCREW-#4-20X.250_TPH_ZP_PLAS

NOTES:
1. CABLES ARE NOT SHOWN IN DRAWING

VER	REV	RECORD	ECO#	DATE	APPR
	C	2X F000170 WAS 2X 130938. 9X F000176 WAS 9X 130948	C01695	02-Oct-00	KB
	B	MOVE L000003 TO HPD TOP BOM LEVEL. R000101	C01417	11-JUL-00	TJK
	A	INITIAL RELEASE	C00967	14-Feb-00	JS

DRAWN BY: JS — DATE: 27-May-99
DIM UNITS: inch
SCALE: 0.330 — SIZE: B

FARGO ELECTRONICS, INCORPORATED

DESCRIPTION: ASSY-CONTROL PANEL — 1 / 1

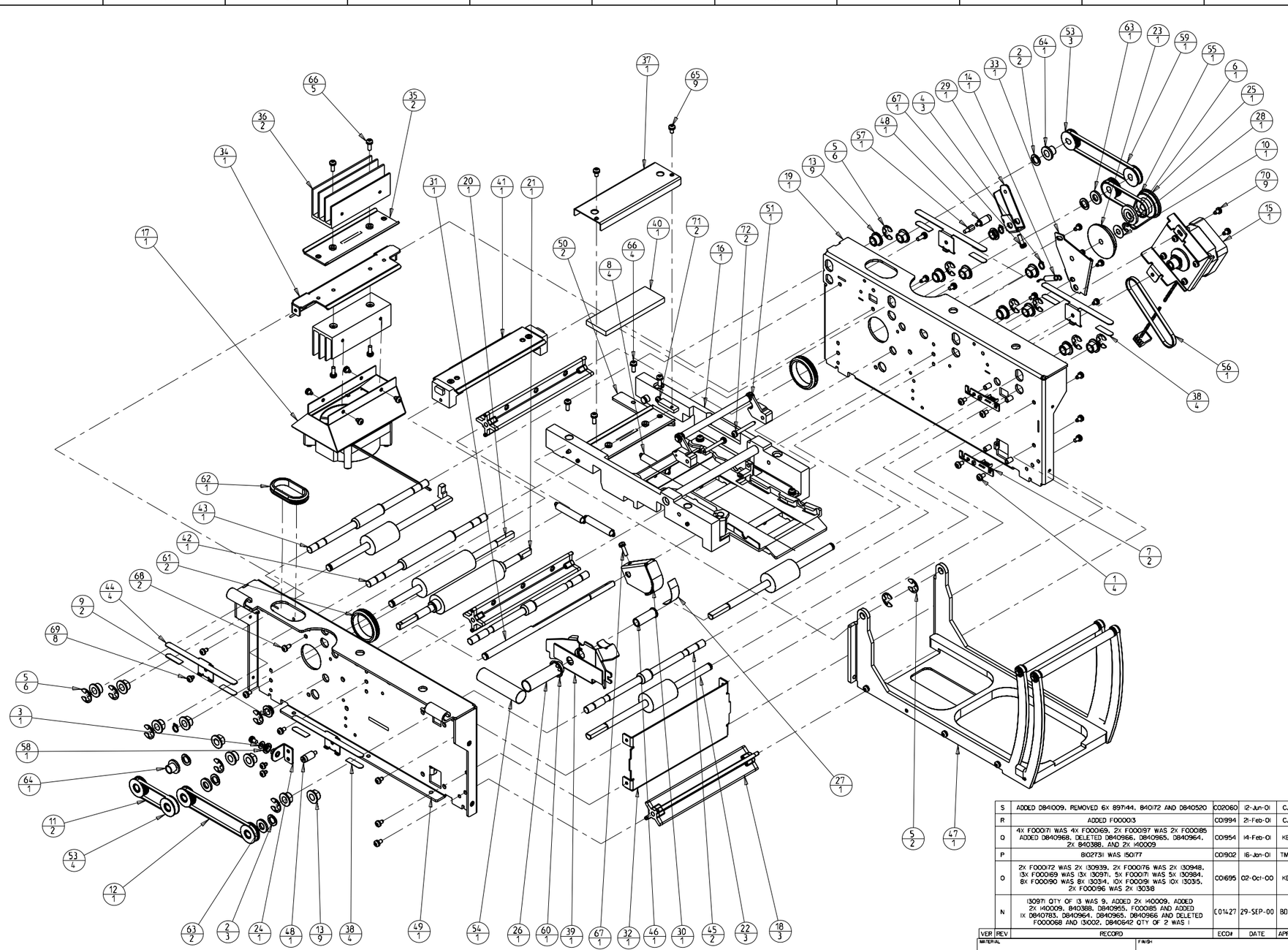
ASSY DWG

PROJECT: HD7XX — ASSY PART NUMBER: 840168 — ITEM NUMBER: 840168

ENGINEERING USE ONLY

DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
840168	840168 ASSY-CONTROL PANEL	ASSEM

ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION	
1	4	130313	PART	SCREW-M3X5 CHS HD	
2	5	130951	PART	WASHER-SPRING.269ID.423OD.006THK	
3	1	140040	PART	WASHER 3MM FLAT	
4	3	140048	PART	RETAINING RING-EXT E .25 IN SHFT	
5	14	140062	PART	RETAINING RING-EXT E .250 IN SHFT	
6	1	140063	PART	RETAINING RING-EXT E .188 IN SHFT	
7	2	140407	ASSEMBLY	ASY-SENSOR BOARD	
8	4	150093	PART	SPRING-EXT .250 X 1.500 X .018	
9	2	150101	PART	BUSHING-NYLINER .250	
10	1	150199	PART	SPACER .198 ID .493 OD .010 THK	
11	2	220071	PART	BELT-65 GRV 125 W MXL	
12	1	220082	PART	BELT-105 GRV 125 W MXL	
13	18	760343	PART	BEARING DRIVE ROLLER	
14	1	810273II	PART	SPRING-LID LIFT	
15	1	840164	ASSEMBLY	ASSY-STEPPER BASE	
16	1	840165	ASSEMBLY	ASSY-CARD-PATH BASE	
17	1	840166	ASSEMBLY	ASSY-FAN SHROUD	
18	3	840239	PART	CROSS MEMBER 1X1	
19	1	840300 -02	PART	SIDEPLATE-RIGHT BASE PRINT	
20	1	840314	PART	ROLLER-CARD FULL WIDTH	
21	1	840320	PART	ROLLER-PLATEN LAM	
22	3	840321	PART	ROLLER-CARD FEED	
23	1	840328	PART	PULLEY-COMPOUND 15X45 GROOVE	
24	1	840351	PART	BRACKET-MODULE DAMPER	
25	1	840374	PART	PULLEY-COMPOUND 24X36 GRV	
26	1	840375	PART	SPRING-CARD_GUIDE_BASE	
27	1	895747	PART	TAPE CARTRIDGE 1.33" X .375"	
28	1	D000169	PART	FLANGE .250X.750X.125	
29	1	D840503	PART	LEVER DRD SHAFT	
30	1	D840505	PART	BRACKET-DANCER_RETRACTION	
31	1	D840589	PART	SHAFT-DANCER RETRACTION	
32	1	D840619	PART	PLATE-STRUCTURE BASE	
33	1	D840623	ASSEMBLY	PLATE-BELT TENSION	
34	1	D840640	PART	BRACKET-FLATTENER_COOL	
35	2	D840642	PART	BRACKET-FLATTENER_TOP	
36	2	D840649	PART	HEATSINK-FLATTENER	
37	1	D840650	PART	PLATE-FLATTENER COVER	
38	8	D840737	PART	TAPE WING SPRING	
39	1	D840763	PART	BRACKET-GUIDE EDGE BASE	
40	1	D840783	PART	INSULATION-FLATTENER TOP	
41	1	D840816	ASSEMBLY	ASY FLATTENER HOT	
42	1	D840830	PART	ROLLER-PINCH	
43	1	D840831	PART	ROLLER-PINCH	
44	4	D840865	PART	SPRING_PLATE	
45	2	D840886	PART	ROLLER-PINCH	
46	1	D840890	PART	BUSHING CARD GUIDE	
47	1	D840908	ASSEMBLY	ASSY. DANCER	
48	2	D840944	ASSEMBLY	ASY IDLER-TENSIONER	
49	1	D840945	PART	SIDEPLATE-LEFT BASE PRINT	
50	2	D840955	PART	GUIDE - FLATTENER CR100	
51	1	D840968	ASSEMBLY	ASY-ROLLER CR100 UPGRADE	
52	1	D841009	ASSEMBLY	ASY-CABLE HARNESS BASE SNR	
53	7	D850190	PART	PULLEY-MAIN	S
54	Bin	E000070	PART	SLEEVE BRAIDED 1/2"	
55	1	F000003	PART	BELT-60 GRV 125 W MXL	
56	1	F000004	PART	BELT-81 GRV 125 W MXL	
57	1	F000013	PART	M3 X 6 STANDOFF MALE X FEMALE	
58	1	F000015	PART	WASHER-SHOULDER. NYLON	
59	1	F000018	PART	BELT-104 GRV 125 W MXL	
60	1	F000066	PART	RETAINER GRVD .312 X .630 X .010SS	
61	2	F000152	PART	GROMMET 55/64 ID X 1 3/16 OD	
62	1	F000153	PART	GROMMET 31/32 ID X 1.50 OD	
63	3	F000156	PART	SPACER-NYLON .257 X .500 X .062	
64	2	F000157	PART	INSULATOR-SCREW .25 X .51	
65	9	F000169	PART	SCREW-M3X5_TPH_ZP_SEM	
66	9	F000171	PART	SCREW-M3X8_TPH_ZP_SEM	
67	2	F000172	PART	SCREW-M3X10_TPH_ZP_SEM	
68	2	F000176	PART	SCREW-#4-20X.250_TPH_ZP_PLAS	
69	8	F000190	PART	SCREW-M3X4 TPH ZP TAPTITE	
70	9	F000191	PART	SCREW-M3X5 TPH ZP TAPTITE	
71	2	F000196	PART	SCREW-M3X14 TPH ZP TAPTITE	
72	2	F000197	PART	SCREW-M3X25 TPH ZP TAPTITE	



VER	REV	RECORD	ECO#	DATE	APPR
S		ADDED D841009. REMOVED 6X 897144. 840172 AND D840520	C02060	12-Jun-01	CJ
R		ADDED F000013	C01994	21-Feb-01	CJ
Q		4X F000171 WAS 4X F000169. 2X F000197 WAS 2X F000185 ADDED D840968. DELETED D840966, D840965, D840964, 2X 840388, AND 2X 140009	C01954	14-Feb-01	KB
P		810273II WAS 150177	C01902	16-Jan-01	TMH
O		2X F000172 WAS 2X 130939. 2X F000176 WAS 2X 130948. 13X F000169 WAS 13X 130971. 5X F000171 WAS 5X 130984. 8X F000190 WAS 8X 130314. 10X F000191 WAS 10X 130315. 2X F000196 WAS 2X 130318	C01695	02-Oct-00	KB
N		130971 QTY OF 13 WAS 9. ADDED 2X 140009. ADDED 2X 140009, 840388, D840955. F000185 AND ADDED IX D840783. D840964. D840965. D840966 AND DELETED F000068 AND 131002. D840842 QTY OF 2 WAS 1	C01427	29-SEP-00	BDL

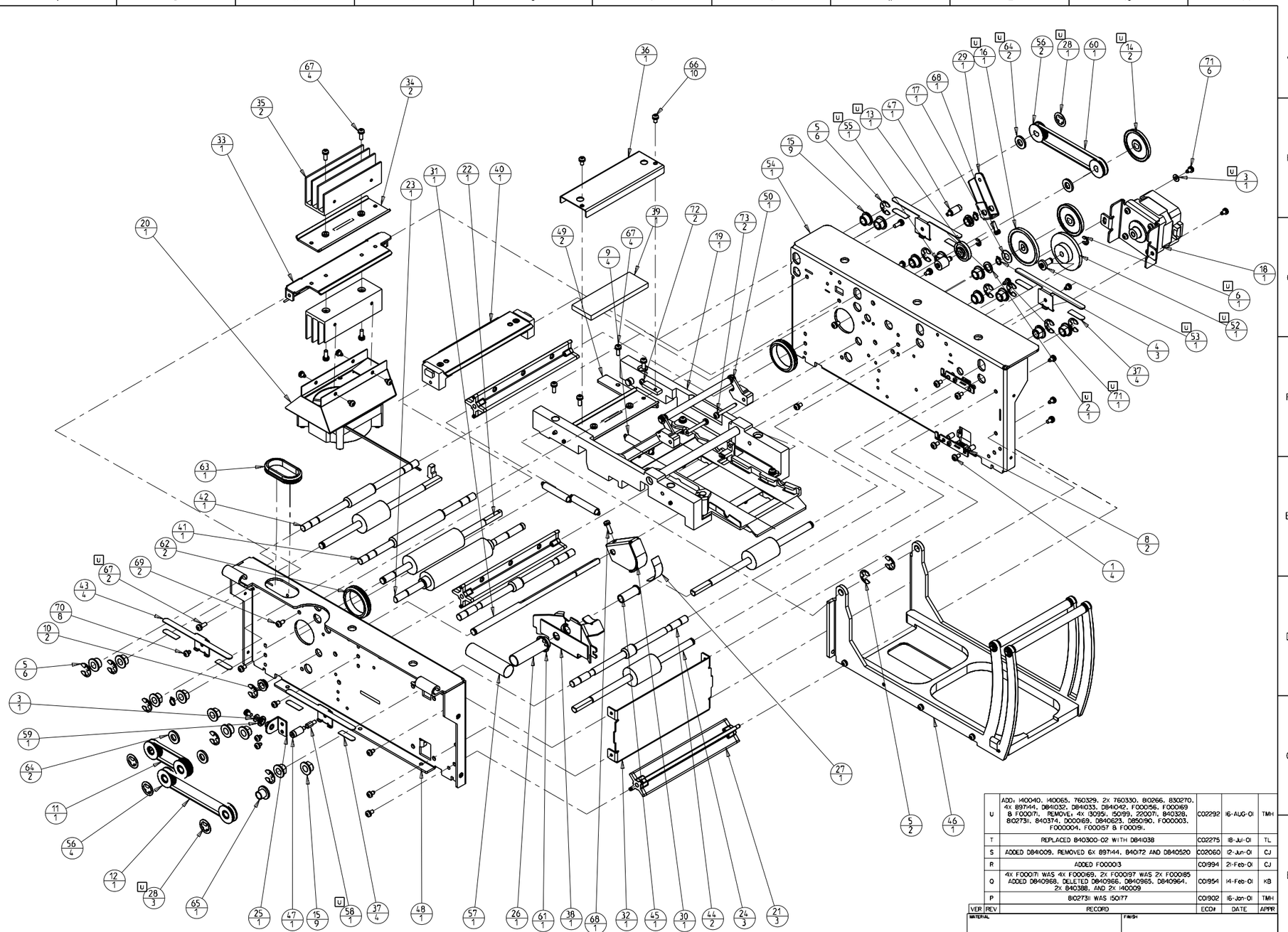
MATERIAL		FINISH	
DRAWN BY	DATE		
JS	23-Jun-00		
	DIM UNITS	FARGO ELECTRONICS, INCORPORATED	This document is the property of FARGO Electronics, Inc. It contains confidential and proprietary information. Unauthorized duplication or disclosure is prohibited.
	inch		
SCALE	SIZE	DESCRIPTION	
0.550	D	ASSY-BASE PRN FRAME	1/1
-		PROJECT: HD7XX	PART NUMBER: 840151
			ITEM NUMBER: 840151

ENGINEERING USE ONLY		
DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
840151	840151_ASSY-BASE_PRN_FRAME	ASSEM

Belt Driven Base Module Components

NOTES:
1. CABLES AND CABLE COMPONENTS ARE NOT SHOWN IN DRAWING.

ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION	
1	4	130313	PART	SCREW-M3X5 CHS HD	
2	1	130951	PART	WASHER-SPRING.269ID.423OD.006THK	U
3	2	140040	PART	WASHER 3MM FLAT	U
4	3	140048	PART	RETAINING RING-EXT E .25 IN SHFT	
5	14	140062	PART	RETAINING RING-EXT E .250 IN SHFT	
6	1	140063	PART	RETAINING RING-EXT E .188 IN SHFT	
7	1	140065	PART	RETAINING RING-EXT E .156 IN SHFT	U
8	2	140407	ASSEMBLY	ASY-SENSOR BOARD	
9	4	150093	PART	SPRING-EXT .250 X 1.500 X .018	
10	2	150101	PART	BUSHING-NYLINER .250	
11	1	220071	PART	BELT-65 GRV 125 W MXL	U
12	1	220082	PART	BELT-105 GRV 125 W MXL	
13	1	760329	PART	20-100 TOOTH IDLER GEAR. 48PITCH. 20deg	U
14	2	760330	PART	GEAR-HEADLIFT	U
15	18	760343	PART	BEARING DRIVE ROLLER	
16	1	810266	PART	GEAR-CARD TRANSPORT DRIVE	U
17	1	830270	PART	SPACER-HEAD LIFT	U
18	1	840164	ASSEMBLY	ASSY-STEPPER BASE	
19	1	840165	ASSEMBLY	ASSY-CARD-PATH BASE	
20	1	840166	ASSEMBLY	ASSY-FAN SHROUD	
21	3	840239	PART	CROSS MEMBER 1X1	
22	1	840314	PART	ROLLER-CARD FULL WIDTH	
23	1	840320	PART	ROLLER-PLATEN LAM	
24	3	840321	PART	ROLLER-CARD FEED	
25	1	840351	PART	BRACKET-MODULE DAMPER	
26	1	840375	PART	SPRING-CARD_GUIDE_BASE	
27	1	895747	PART	TAPE CARTRIDGE 1.33" X .375"	
28	4	897144	PART	RETAINER CLIP	U
29	1	D840503	PART	LEVER DRD SHAFT	
30	1	D840505	PART	BRACKET-DANCER_RETRACTION	
31	1	D840589	PART	SHAFT-DANCER RETRACTION	
32	1	D840619	PART	PLATE-STRUCTURE BASE	
33	1	D840640	PART	BRACKET-FLATTENER_COOL	
34	2	D840642	PART	BRACKET-FLATTENER_TOP	
35	2	D840649	PART	HEATSINK-FLATTENER	
36	1	D840650	PART	PLATE-FLATTENER COVER	
37	8	D840737	PART	TAPE WING SPRING	
38	1	D840763	PART	BRACKET-GUIDE EDGE BASE	
39	1	D840783	PART	INSULATION-FLATTENER TOP	
40	1	D840816	ASSEMBLY	ASY FLATTENER HOT	
41	1	D840830	PART	ROLLER-PINCH	
42	1	D840831	PART	ROLLER-PINCH	
43	4	D840865	PART	SPRING_PLATE	
44	2	D840886	PART	ROLLER-PINCH	
45	1	D840890	PART	BUSHING CARD GUIDE	
46	1	D840908	ASSEMBLY	ASSY. DANCER	
47	2	D840944	ASSEMBLY	ASY IDLER-TENSIONER	
48	1	D840945	PART	SIDEPLATE-LEFT BASE PRINT	
49	2	D840955	PART	GUIDE - FLATTENER CR100	
50	1	D840968	ASSEMBLY	ASY-ROLLER CR100 UPGRADE	
51	1	D841009	ASSEMBLY	ASY-CABLE HARNESS BASE SNR	
52	1	D841032	PART	GEAR-72X36_TOOTH	U
53	1	D841033	PART	POST-PLTN_DRIVE_IDLER	U
54	1	D841038	PART	SIDEPLATE-RIGHT BASE PRINT	
55	1	D841042	PART	POST-BASE IDLER	U
56	6	D850190	PART	PULLEY-MAIN	U
57	8in	E000070	PART	SLEEVE BRAIDED 1/2"	
58	1	F000013	PART	M3 X 6 STANDOFF MALE X FEMALE	
59	1	F000015	PART	WASHER-SHOULDER. NYLON	
60	1	F000018	PART	BELT-104 GRV 125 W MXL	
61	1	F000066	PART	RETAINER GRVD .312 X .630 X .010SS	
62	2	F000152	PART	GROMMET 55/64 ID X 1 3/16 OD	
63	1	F000153	PART	GROMMET 31/32 ID X 1.50 OD	
64	4	F000156	PART	SPACER-NYLON .257 X .500 X .062	U
65	1	F000157	PART	INSULATOR-SCREW .25 X .51	U
66	10	F000169	PART	SCREW-M3X5_TPH_ZP_SEM	U
67	10	F000171	PART	SCREW-M3X8_TPH_ZP_SEM	U
68	2	F000172	PART	SCREW-M3X10_TPH_ZP_SEM	
69	2	F000176	PART	SCREW-#4-20X.250_TPH_ZP_PLAS	
70	8	F000190	PART	SCREW_M3X4_TPH_TAPTITE	
71	7	F000191	PART	SCREW-M3X5 TPH ZP TAPTITE	U
72	2	F000196	PART	SCREW-M3X14 TPH ZP TAPTITE	
73	2	F000197	PART	SCREW-M3X25 TPH ZP TAPTITE	



Gear Driven Base Module Components

NOTES:
1. CABLES AND CABLE COMPONENTS ARE NOT SHOWN IN DRAWING.

VER	REV	RECORD	ECO#	DATE	APPR
U		ADD. 140040. 140065. 760329. 2X 760330. 810266. 830270. 4X 897144. D841032. D841033. D841042. F000156. F000169 & F000171. REMOVE: 4X 130951. 150093. 220071. 840328. 810273II. 840374. D000169. D840623. D850190. F000003. F000004. F000157 & F000191.	C02292	16-AUG-01	TMH
T		REPLACED 840300-02 WITH D841038	C02275	18-Jul-01	TL
S		ADDED D841009. REMOVED 6X 897144. 840172 AND D840520	C02060	12-Jun-01	CJ
R		ADDED F000013	C01994	21-Feb-01	CJ
Q		4X F000171 WAS 4X F000169. 2X F000197 WAS 2X F000185 ADDED D840968. DELETED D840966. D840965. D840964. 2X 840388. AND 2X 140009	C01954	14-Feb-01	KB
P		810273II WAS 150177	C01902	16-Jan-01	TMH

MATERIAL | FINISH

DRAWN BY: JS | DATE: 25-Aug-00 | DIM UNITS: inch | SCALE: 0.550 | SIZE: D

FARGO ELECTRONICS, INCORPORATED

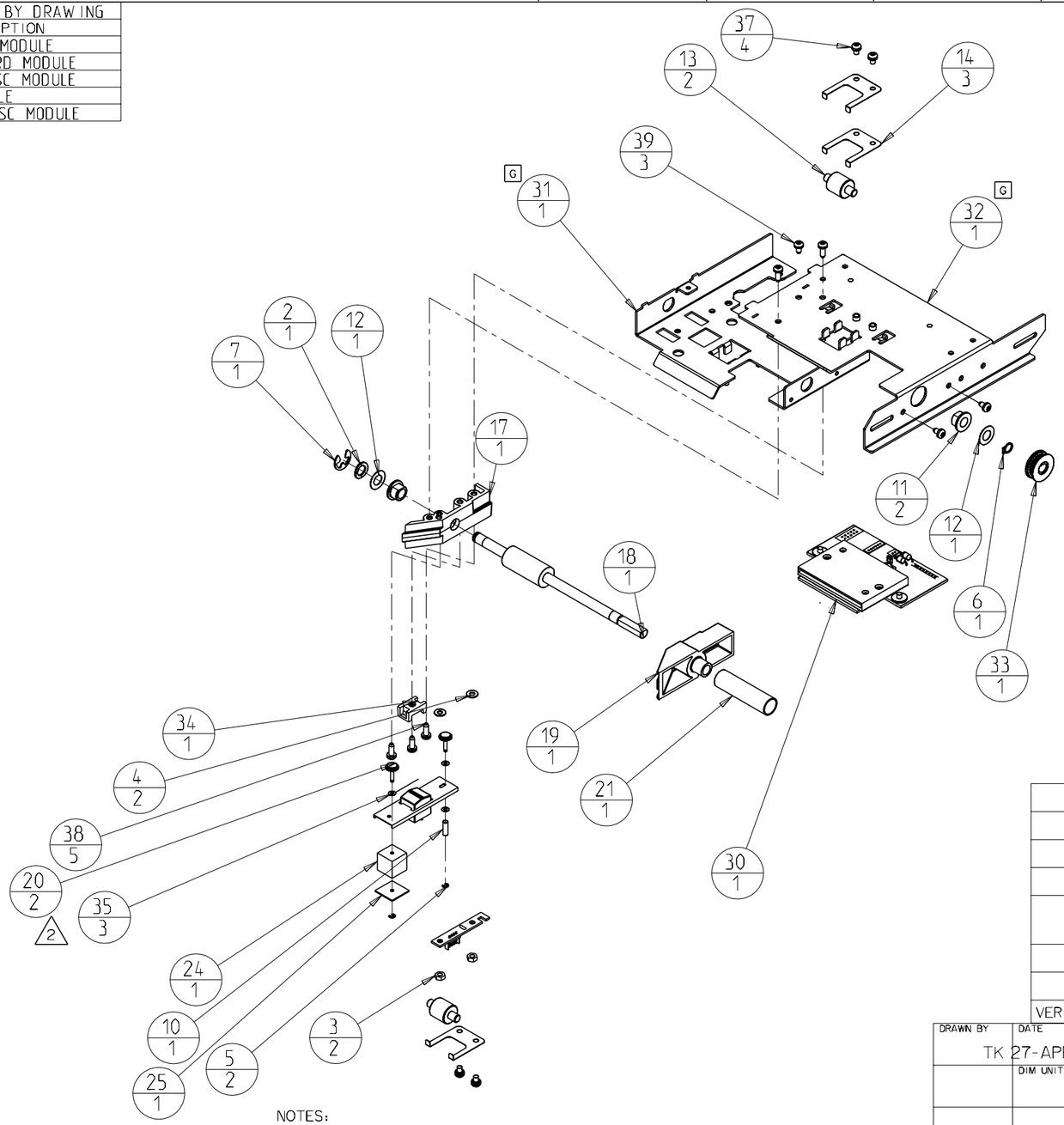
DESCRIPTION: ASSY-BASE PRN FRAME | 1 / 1

PROJECT	PART NUMBER	ITEM NUMBER
HD7XX	840151	840151

ENGINEERING USE ONLY

DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
840151	840151 ASSY-BASE PRN FRAME	ASSEM

ASSEMBLY VERSIONS REFERENCED BY DRAWING		
ITEM	PART NUMBER	DESCRIPTION
2	840103-02	ASY-MAGETICS MODULE
3	840103-03	ASY-SMART CARD MODULE
5	840103-05	ASY-MAG AND SC MODULE
7	840103-07	ASY-JIS2 MODULE
8	840103-08	ASY-JIS2 AND SC MODULE



ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	1	000248	PART	IND FERRITE BEAD SNAP ON
2	1	130951	PART	WASHER-SPRING.269ID.4230D.006THK
3	2	130985	PART	NUT - M3 X 0.5 KEPS CZ
4	2	140040	PART	WASHER 3MM FLAT
5	2	140046	PART	RETAINING RING-EXT E .063 IN SHFT
6	1	140048	PART	RETAINING RING-EXT C .25 IN SHFT
7	1	140062	PART	RETAINING RING-EXT E .250 IN SHFT
8	2	140069	PART	TIE WRAP
9	1	140407	ASSEMBLY	ASY-SENSOR BOARD
10	1	150071	PART	SPRING - COMP .120 X .375 X .014
11	2	760343	PART	BEARING DRIVE ROLLER
12	2	760386	PART	SPACER-CLUTCH
13	2	810236	PART	ROLLER-CARD IDLER
14	3	810480	PART	SPRING-CARD IDLER
15	1	840104	ASSEMBLY	ASY MAG HEAD-3 CHANNEL HI CO
16	1	840147	ASSEMBLY	ASY CBL CT-CT, SNR CRD MAG
17	1	840231	PART	EDGE GUIDE REAR, MAG-SC
18	1	840234	PART	ROLLER-CARD MAG
19	1	840235	PART	EDGE GUIDE-FRONT
20	2	840236	PART	POST MAG HEAD 2MM
21	1	840375	PART	SPRING-CARD_GUIDE_BASE
22	1	D840507	ASSEMBLY	ASY MAG HEAD JIS2
23	1	D840655	ASSEMBLY	ASY-CABLE MAG TO BRD
24	1	D840848	PART	SUPPORT-MAG HEAD DAMPER
25	1	D840849	PART	PLATE- .58" SQ X 22 GA
26	1	D840879	ASSEMBLY	ASY CBL SMART CARD
27	1	D840883	ASSEMBLY	ASY CBL DB9 RS232 WITH LEADS
28	1	D840884	ASSEMBLY	ASY CBL ENCODER PWR
29	1	D841004	ASSEMBLY	ASY CBL RS232 SERIAL
30	1	D841011	ASSEMBLY	ASY SC CONTACT STATION
G 31	1	D841030	PART	MAG/MIFARE PLATE
G 32	1	D841031	PART	PLATE SMART CARD
33	1	D850190	PART	PULLEY-MAIN
34	1	F000086	PART	FLAT TIE WRAP, SCREW MOUNT
35	3	F000103	PART	WASHER .180 OD .082 ID .005 THK
36	1.375 in	F000117	PART	TAPE 1" 2 SIDED ADHESIVE
37	4	F000168	PART	SCREW-M3X4_TPH_ZP_SEM
38	5	F000177	PART	SCREW-#4-20X.313_TPH_ZP_PLAS
39	3	F000191	PART	SCREW-M3X5 TPH ZP TAPTITE

VER	REV	RECORD	ECO#	DATE	APPR
	G	D841030 WAS 840230, D841031 WAS 840232	C02285	11-JUL-01	BDJ
	F	D841011 WAS A000117, EDITED NOTE 2, D841004 WAS D840877	C02261	2-JUL-01	BDJ
	E	UPDATED BOM IN AGILE FOR 840103-03 AND 810103-09	C02000	21-Feb-01	CJ
	D	DELETED 840147 FROM 840103-03 VERSION	C01706	03-Oct-00	KB
	C	4X F000168 WAS 4X 130937, 10X F000169 WAS 10X 130971 5X F000177 WAS 5X F000008, 3X F000191 WAS 3X 130315	C01695	02-Oct-00	KB
	B	REPLACED F000005 WITH D850190	C01516	04-AUG-00	DJC
	A	INITIAL RELEASE	C01246	10-MAY-00	TK

NOTES:
1. CABLES AND CABLE COMPONENTS ARE NOT SHOWN IN DRAWING

2 AS REQUIRED USE 2X F000103 WASHERS TO SET THE GAP BETWEEN THE MAGHEAD AND THE ROLLER TO BE BETWEEN .010" AND .015".

DRAWN BY	DATE
TK	27-APR-00
	DIM UNITS: inch
SCALE: 0.350	SIZE: B
ASSY DWG	

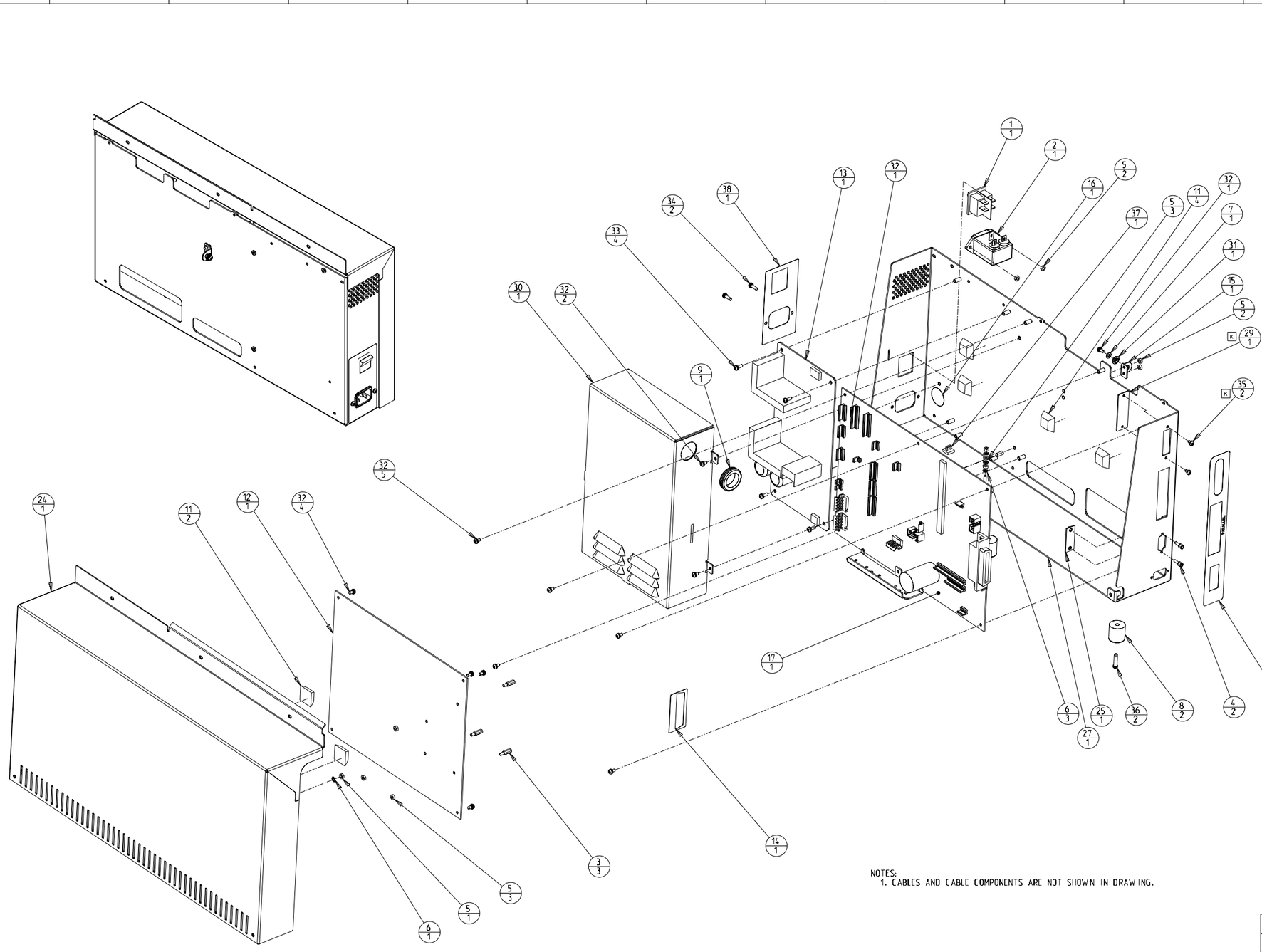
FARGO ELECTRONICS, INCORPORATED

DESCRIPTION: ASY ENCODER MODULE — 1 / 1

PROJECT	ASSY PART NUMBER	ITEM NUMBER
HDP7XX	R000100	R000100

ENGINEERING USE ONLY

DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
R000100	R000100 ASY ENCODER MODULE	ASSEM



ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	1	120011	PART	SWITCH
2	1	130067	PART	FILTER
3	3	130859	PART	M3 X 11 STANDOFF MALE X FEMALE
4	2	130918	PART	SCREW-JACK 4-40 5/16
5	11	130985	PART	NUT - M3 X 0.5 KEPS CZ
6	4	140012	PART	WASHER-M3 EXT TOOTH LOCKING
7	1	140040	PART	WASHER 3MM FLAT
8	2	140043	PART	FOOT-RECESSED BUMPER
9	1	140055	PART	GROMMET-.750_ID X 1-.125_OD
10	2	140069	PART	TIE WRAP
11	6	140079	PART	FOOT-RUBBER BUMPER-SQR
12	1	140402	ASSEMBLY	ASY-5200-MCPU_BRD
13	1	150240	PART	POWER SUPPLY-POTRANS
14	1	760420	PART	GROUND SHIELD
15	1	840351	PART	BRACKET-MODULE DAMPER
16	1	895689	PART	LABEL-PRIMARY EARTH GROUND
17	1	A000030	ASSEMBLY	ASY-5200_CPU_BRD
18	1	D840510	ASSEMBLY	ASY CBL GROUND WIRE
19	1	D840511	ASSEMBLY	ASY-CABLE PWR SPY TO SW
20	2	D840512	ASSEMBLY	ASY-CABLE LINE FILTER TO SW
21	1	D840513	ASSEMBLY	ASY-CABLE LAM J51 TO PRINT J49
22	1	D840515	ASSEMBLY	ASY-CABLE PWR SPY TO PRINT J61
23	1	D840516	ASSEMBLY	ASY-CABLE LAM J59 TO PRINT J62
24	1	D840583	ASSEMBLY	SKIN- REAR
25	1	D840693	ASSEMBLY	PLATE-COVER, D-SUB
26	1	D840724	ASSEMBLY	ASY CBL GROUND 16 AWG XS
27	1	D840866	ASSEMBLY	BRACKET-REAR
K 28	1	D841003	ASSEMBLY	ASY CBL HRNS E-CARD
K 29	1	D841008	PART	PLATE-SERIAL COVER
30	1	D850205	PART	COVER-POWER SUPPLY
31	1	F000015	PART	WASHER-SHOULDER, NYLON
32	13	F000169	PART	SCREW-M3X5_TPH_ZP_SEM
33	4	F000171	PART	SCREW-M3X8_TPH_ZP_SEM
34	2	F000172	PART	SCREW-M3X10_TPH_ZP_SEM
K 35	2	F000191	PART	SCREW-M3X5 TPH ZP TAPTITE
36	2	F000198	PART	SCREW-M4X16 TPH ZP TAPTITE
37	1	F000229	PART	CLAMP-CABLE
38	1	L000019	PART	LABEL-HDP POWER
39	1	L000027	PART	LABEL-COMMUNICATION PORTS
K 40	1	L000162	PART	LABEL-COMMUNICATION PORTS

NOTES:
1. CABLES AND CABLE COMPONENTS ARE NOT SHOWN IN DRAWING.

	VER	REV	RECORD	ECO#	DATE	APPR
		K	ADDED L000162, D841008, D841003, 2X F000191 REMOVED D840716	C02264	30-JUN-01	BDJ
		J	REPLACED 140401 WITH A000030	C02210	20-Jun-01	REP
		H	F000229 WAS 140057	C02073	14-May-01	CJ
		G	- NOT USED -	C02038	12-APR-01	BDJ
		F	2X F000172 WAS 2X 130939, 4X F000171 WAS 4X 130984, 13X F000169 WAS 13X 130971, 2X F000198 WAS 2X F000099	C01695	02-Oct-00	KB
		E	ADDED F000015, 140040, 130971	C01586	25Aug-00	BL
		D	ADD: 3X 130859; 3X 130985, QTY 11 WAS 8	C01417	11-JUL-00	TJK
		C	REMOVED D00248, 110009 AND 140040 REPLACED F000064 WITH F000099	C01256	17-MAY-00	TJK
		B	D840866 WAS D850208	C0118	21-Mar-00	NEO
		A	INITIAL RELEASE	C00977	29-Apr-99	JS

MATERIAL | FINISH

DRAWN BY: JS | DATE: 29-Apr-99 | DIM UNITS: inch | SCALE: 0.437 | SIZE: D | -

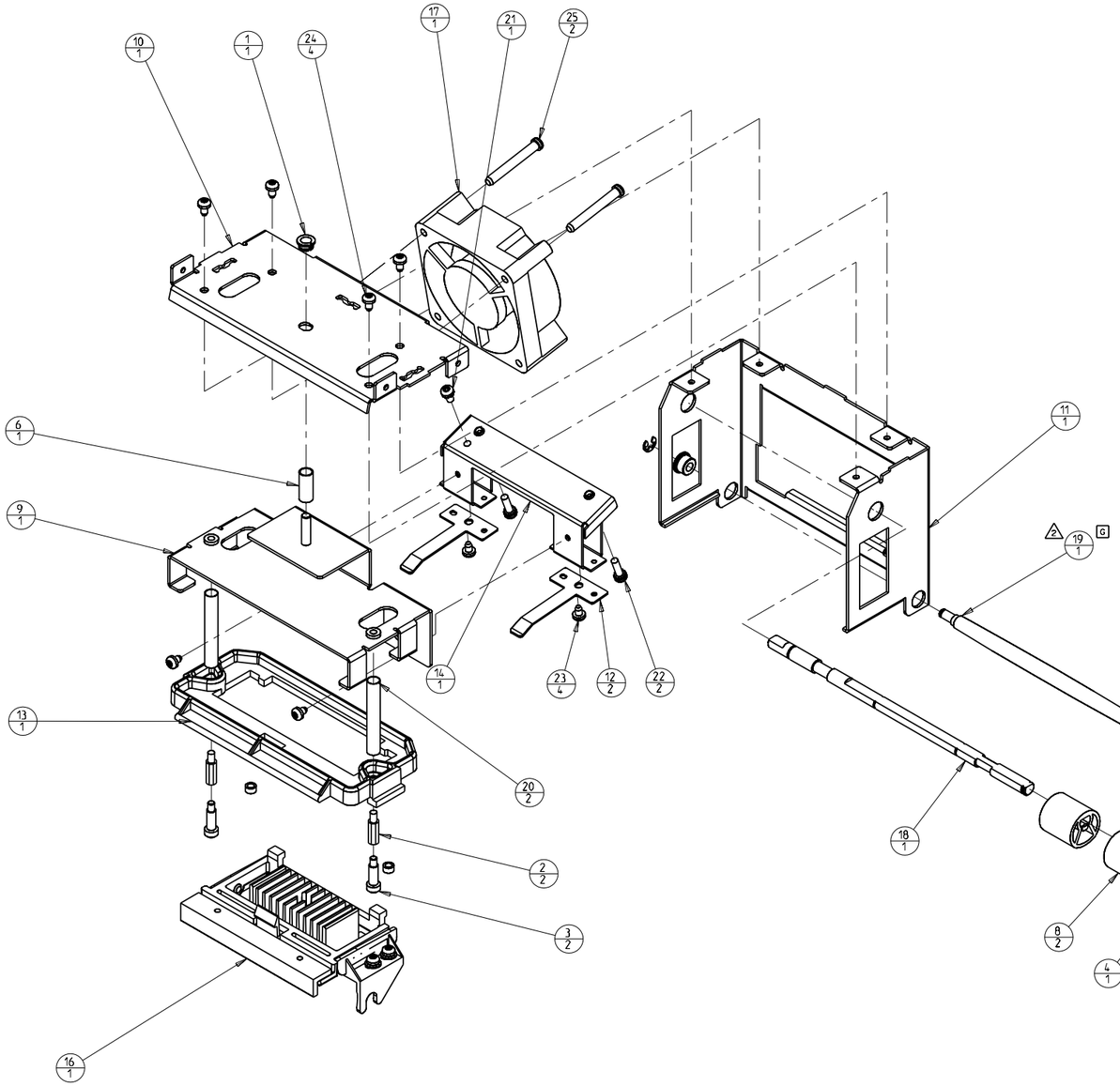
FARGO ELECTRONICS, INCORPORATED

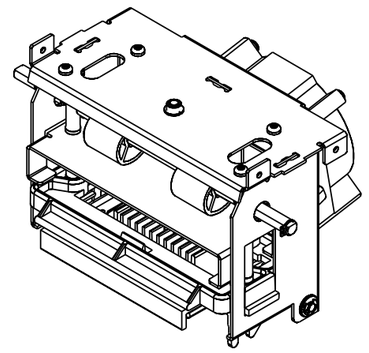
DESCRIPTION: ASSY POWER COMPONENTS | 1 / 1

PROJECT: HD7XX | PART NUMBER: 840161 | ITEM NUMBER: 840161

ENGINEERING USE ONLY

DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
840161	840161 ASSY-POWER COMPONENTS	ASSEM





ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	1	150188.000	PART	BUSHING-NYLINER 4MM
2	2	130857	PART	M3 X 20 STANDOFF MALE X FEMALE
3	2	131002	PART	SCREW SHOULDER M3 X 10
4	1	140048	PART	RETAINING RING-EXT C .25 IN SHFT
5	2	140065	PART	RETAINING RING-EXT E .156 IN SHFT
6	1	150175	PART	SPRING COMP 240-562-016
7	2	760219	PART	BEARING-RIBBON ROLLER
8	2	760252	PART	CAM-HEAD LIFTER
9	1	840266	PART	BRACKET_CAM_GUIDE-PRN
10	1	840267	PART	BRACKET PRINT MOUNT
11	1	840268	PART	BRACKET PRN HOUSING
12	2	840272	PART	SPRING HEAD FORCE
13	1	840273	PART	MOUNT UPPER PRINTHEAD
14	1	840276	PART	BRACKET SPRING TENSION
15	1	D840722	ASSEMBLY	ASY CBL 1/8 BRAID X 6
16	1	D840854	ASSEMBLY	ASY PRINT-HEAD
17	1	D840986	ASSEMBLY	ASY FAN 150313 FAN TOP
18	1	D841015	PART	SHAFT-CAM-PRN
G 19	1	D841040	PART	ROLLER-RBN_CONVEX
20	2	F000166	PART	SPRING-COMP .228 X 1.50 X .036
21	1	F000169	PART	SCREW-M3X5_TPH_ZP_SEM
22	2	F000172	PART	SCREW-M3X10_TPH_ZP_SEM
23	4	F000190	PART	SCREW_M3X4_TPH_TAPTITE
24	4	F000191	PART	SCREW-M3X5 TPH ZP TAPTITE
25	2	F000199	PART	SCREW-M4X30 TPH ZP TAPTITE

NOTES:
1. CABLES AND CABLE COMPONENTS ARE NOT SHOWN IN DRAWING.
2 D841040 SHAFT MUST BE ASSEMBLED SUCH THAT THE STEP FACES UPWARD WHEN 840153 MODULE IS OPEN.

G	D841040 WAS 840317, ADDED NOTE #2.	C02229	21-JUL-01	TMH
F	D84105 WAS 840271	C02002	28-Mar-01	CJ
E	D840986 WAS D840800	C01936	08-Feb-01	KB
D	F000169 WAS 130971, 2X F000172 WAS 2X 130939, 4X F000190 WAS 4X 130314, 4X F000191 WAS 4X 130315, 2X F00099 WAS 2X F000036, REMOVED 140102	C01695	02-Oct-00	KB
C	2X F000166 WAS 2X 150174	C01679	02-Oct-00	KB
B	CREATED SUB-ASY D840854	C01465	6-MAR-00	DJC
A	INITIAL RELEASE	C01012	27-Apr-99	JS
VER	REV	RECORD	ECO#	DATE	APPR

MATERIAL: | FINISH:

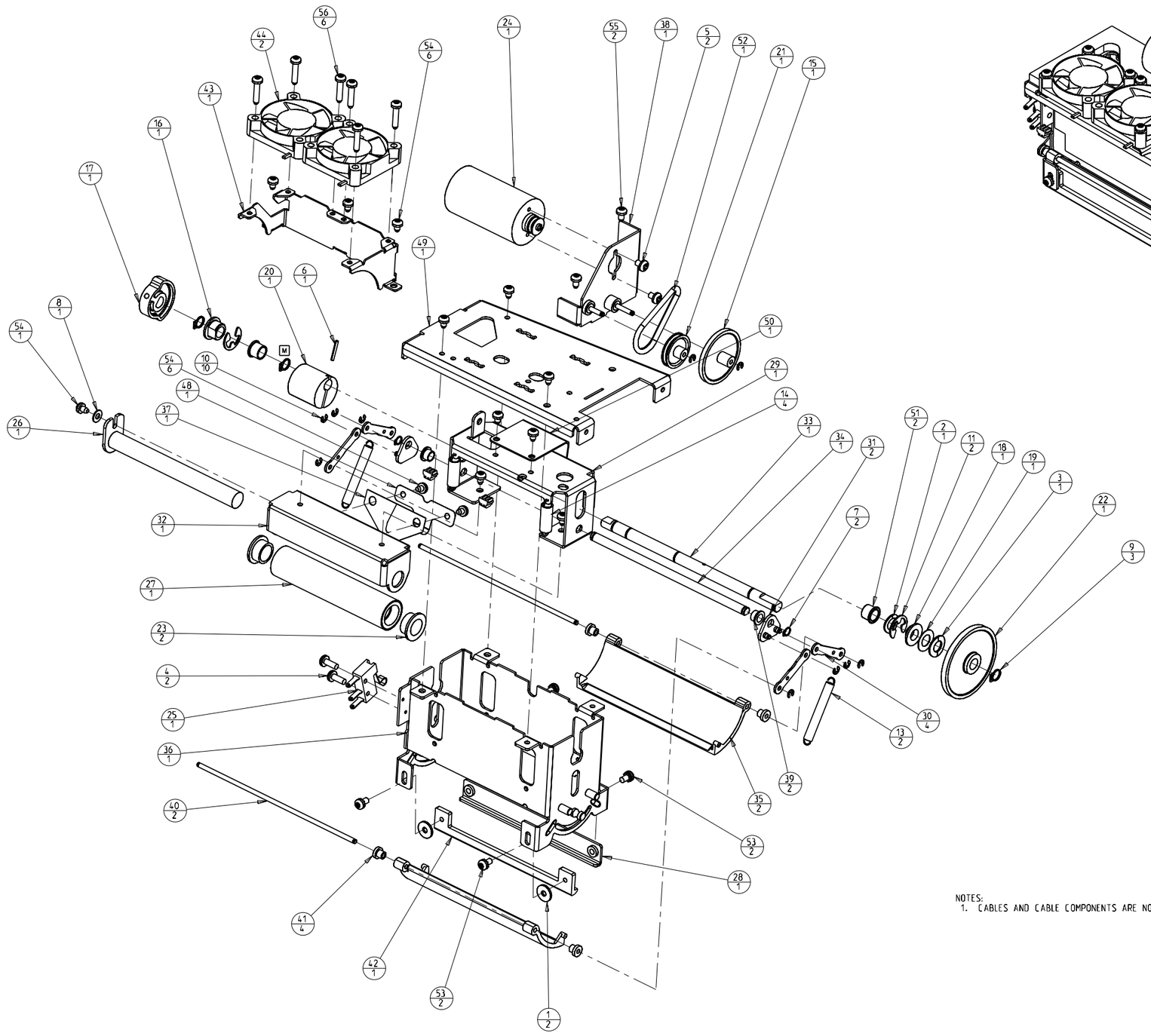
DRAWN BY: JS | DATE: 27-Apr-99 | DIM UNITS: inch | SCALE: 0.900 | SIZE: D | DESCRIPTION: ASY-PRN HEADLIFT | 1 / 1 | -

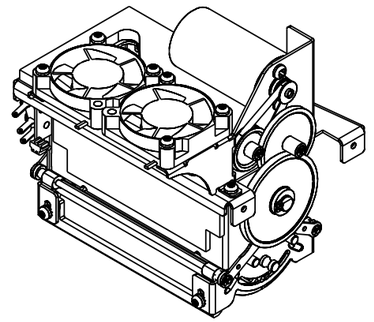
FARGO ELECTRONICS, INCORPORATED

PROJECT: HD7XX | PART NUMBER: 840160 | ITEM NUMBER: 840160

ENGINEERING USE ONLY

DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
840160	840160 ASSY-PRN HEADLIFT	ASSEM





ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	2	130285	PART	WASHER .1251D x .3750D x .040 NYLON
2	1	130951	PART	WASHER-SPRING.2691D.4230D.006THK
3	1	130969	PART	WASHER-SPRING .256 ID .485 OD .007 THK
4	2	130972	PART	SCREW-M2X8 PPH
5	2	130973	PART	SCREW-M2.5X4 PPH
6	1	130988	PART	PIN-ROLL .062 X .440
7	2	140009	PART	RETAINING RING-EXT C .188 IN SHFT
8	1	140040	PART	WASHER 3MM FLAT
M	9	3	140048	PART
10	10	140061	PART	RETAINING RING-EXT E .094 IN SHFT
11	2	140062	PART	RETAINING RING-EXT E .250 IN SHFT
12	1	140069	PART	TIE WRAP
13	2	150176	PART	SPRING-EXT .188 X 1.500 X .018
14	4	150177	PART	SPRING-EXT .250 X .875 X .029
15	1	760288	PART	GEAR-RIBBON-IDLER
16	1	760343	PART	BEARING DRIVE ROLLER
17	1	760348	PART	CAM-LID SENSOR
18	1	760363	PART	BEARING DRIVE ROLLER
19	1	760386	PART	SPACER-CLUTCH
20	1	762452	PART	CAM-HEADLIFT
21	1	771687	PART	PULLEY GEAR COMBO
22	1	810271	PART	GEAR-CARD FEED SHAFT
23	2	810434	PART	BEARING-HEATER
24	1	840132	ASSEMBLY	ASY-MTR 150291 CT 8.50"
25	1	840142	ASSEMBLY	ASY-SWT 120077 CT 9.80"
26	1	840251	PART	HEATER CARTRIDGE 24 VDC
27	1	840252	PART	ROLLER-LAMINATION
28	1	840253	PART	BAR_RIBBON PEEL
29	1	840254	PART	BRACKET_CAM GUIDE
30	4	840255	PART	LINK LAM COVER
31	2	840256	PART	LINK LAMINATION GUIDE
32	1	840257	PART	BRACKET-LAM COVER
33	1	840258	PART	SHAFT CAM LAMINATION
34	1	840259	PART	SHAFT LAM GUIDE
35	2	840260	PART	COVER LAM ROLLER
36	1	840262	PART	LAMINATION HOUSING
37	1	840263	ASSEMBLY	THERMOCOUPLE-KAPTON
38	1	840370	ASSEMBLY	BRACKET MOTOR W-POSTS
39	2	840388	PART	BUSHING LAM GUIDE
40	2	D840618	PART	SHAFT-LAM_ROLLER_COVER
41	4	D840694	PART	BUSHING LAM COVER
42	1	D840698	PART	DEFLECTOR-RIBBON LAM
43	1	D840750	PART	SHROUD-LAM PEEL FAN
44	2	D840769	ASSEMBLY	ASY-FAN 150315 FAN ITM
45	2	D840780	PART	INSULATION-LAM. SIDE
46	1	D840781	PART	INSULATION-LAM. FAN
47	1	D840782	PART	INSULATION LAM. TOP
48	1	D840803	PART	SPRING-THERMOCOUPLE
49	1	D840915	PART	BRACKET-LAM MOUNT
50	1	D840943	PART	SPRING-LAM PRESSURE
51	2	D840951	PART	BUSHING SHAFT GUIDE
52	1	F000158	PART	O-RING 0.103 X 1.063
53	4	F000169	PART	SCREW_M3X5_TPH_ZP_SEM
54	13	F000190	PART	SCREW_M3X4_TPH_TAPTITE
55	2	F000191	PART	SCREW-M3X5 TPH ZP TAPTITE
56	6	F000196	PART	SCREW-M3X14 TPH ZP TAPTITE

NOTES:
1. CABLES AND CABLE COMPONENTS ARE NOT SHOWN IN DRAWING.

	REV	RECORD	ECO#	DATE	APPR
	M	ADDED 140048. REMOVED 140062, QTY 1 EA	C02192	20-Jun-01	TL
	L	ADDED 130972 QTY 1	C01938	01-Feb-01	BDL
	K	ADDED F000190 QTY 3. F000196 QTY 6. D840750 QTY 1. D840769 QTY 2. AND D840781 QTY 1	C01928	25-Jan-01	TMH
	J	REMOVED F000190 QTY 3. F000196 QTY 6. D840750 QTY 1. D840769 QTY 2. AND D840781 QTY 1	C01896	03-Jan-01	TMH
	H	4X F000169 WAS 4X 130971. 13X F000190 WAS 7X 130314. 2X F000191 WAS 8X 130315. 6X F000196 WAS 6X 130318	C01695	02-Oct-00	KB
	G	F000158 WAS F000063	C01633	08-SEP-00	DJC
	F	D840951 QTY 2 WAS 840339 QTY 2	C01627	07-Sep-00	KB
	E	ADDED, D840934 & 2X 130314. D840915 WAS 840261	C01579	23-AUG-00	TMH
	D	130988 WAS F000046	C0139	02-Jun-00	KB
	C	ADDED 140040 QTY 1	C01167	05-Apr-00	JS
	B	REMOVED F000002 QTY 1. ADDED 140069 QTY 1	C01058	07-Mar-00	JS
	A	INITIAL RELEASE	C00980	16-Feb-00	JS

MATERIAL | FINISH

DRAWN BY: JS | DATE: 29-Apr-99 | DIM UNITS: inch | SCALE: 0.900 | SIZE: D | -

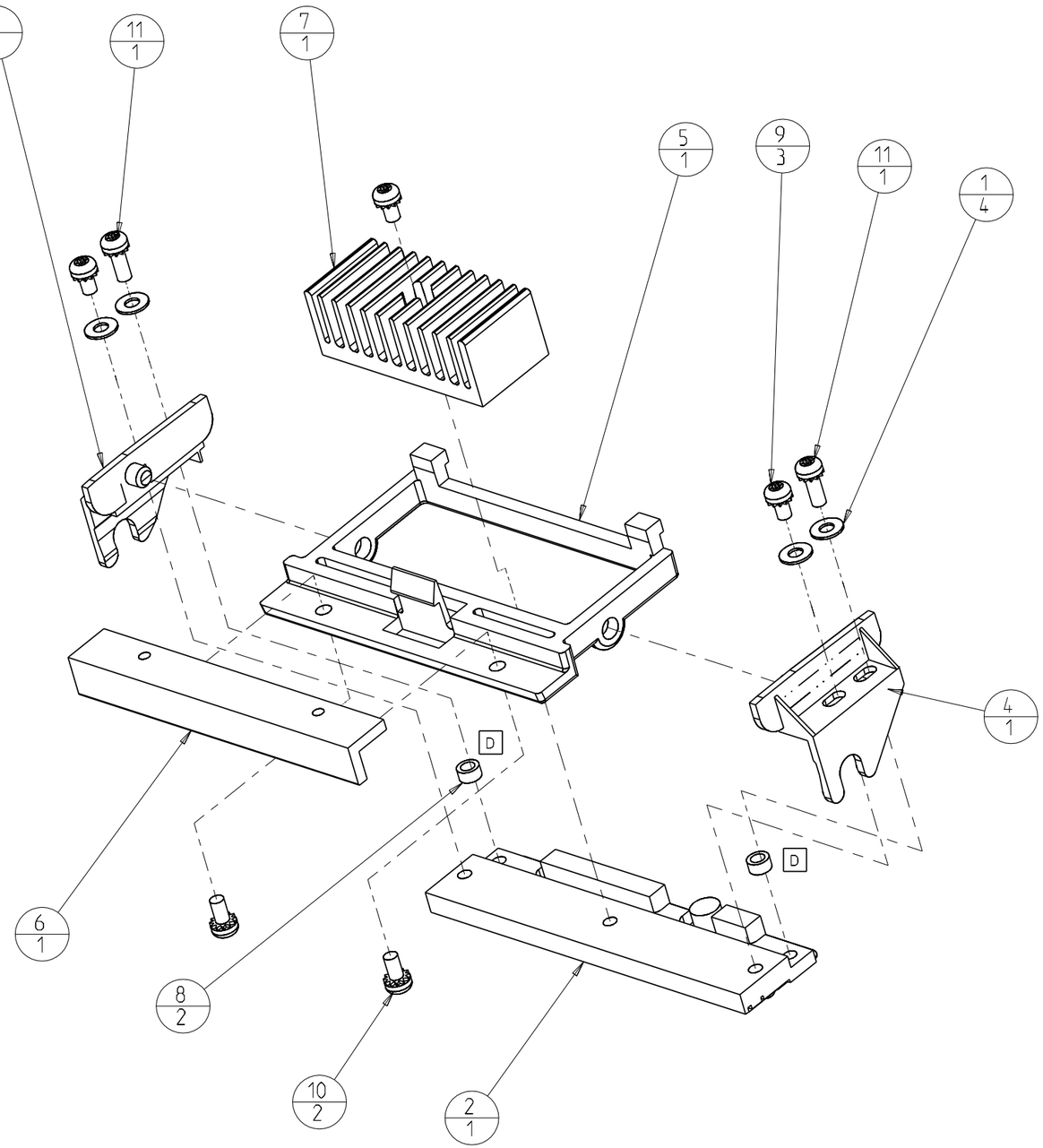
FARGO ELECTRONICS, INCORPORATED

DESCRIPTION: ASSY LAMINATION | 1 / 2

PROJECT: HD7XX | PART NUMBER: 840159 | ITEM NUMBER: 840159

ENGINEERING USE ONLY

DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
840159	840159 ASSY-LAMINATION	ASSEM



ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	4	140040	PART	WASHER 3MM FLAT
2	1	220052	PART	PRINTHEAD KYT-82-12MFW10-FAR
3	1	840269	PART	GUIDE-PRINTHEAD LEFT
4	1	840270	PART	GUIDE-PRINTHEAD LEFT
5	1	840274	PART	MOUNT PRINTHEAD LOWER
6	1	D840638	PART	DEFLECTOR-RIBBON
7	1	D840778	PART	HEATSINK-PRINTHEAD
8	2	F000122	PART	SPACER OD.190 X ID.120, .100THK
9	3	F000169	PART	SCREW-M3X5 TPH ZP SEM
10	2	F000170	PART	SCREW-M3X6 TPH ZP SEM
11	2	F000171	PART	SCREW-M3X8 TPH ZP SEM

VER	REV	RECORD	ECO#	DATE	APPR
	D	ADDED F000122 QTY: 2	C02192	20-Jun-01	KB
	C	F000170 QTY 2 WAS 130938 QTY 2. F000169 QTY 3 WAS 130971 QTY 3. F000171 QTY 2 WAS 130984 QTY 2.	C01695	02-Oct-00	KB
	B	RELEASE OF BOM IN AGILE	C01465	20-JUL-00	DJC
	A	INITIAL RELEASE	C01056	06-Mar-00	DJC

DRAWN BY: DJC — DATE: 06-Mar-00
DIM UNITS: inch
SCALE: 1.000 — SIZE: B

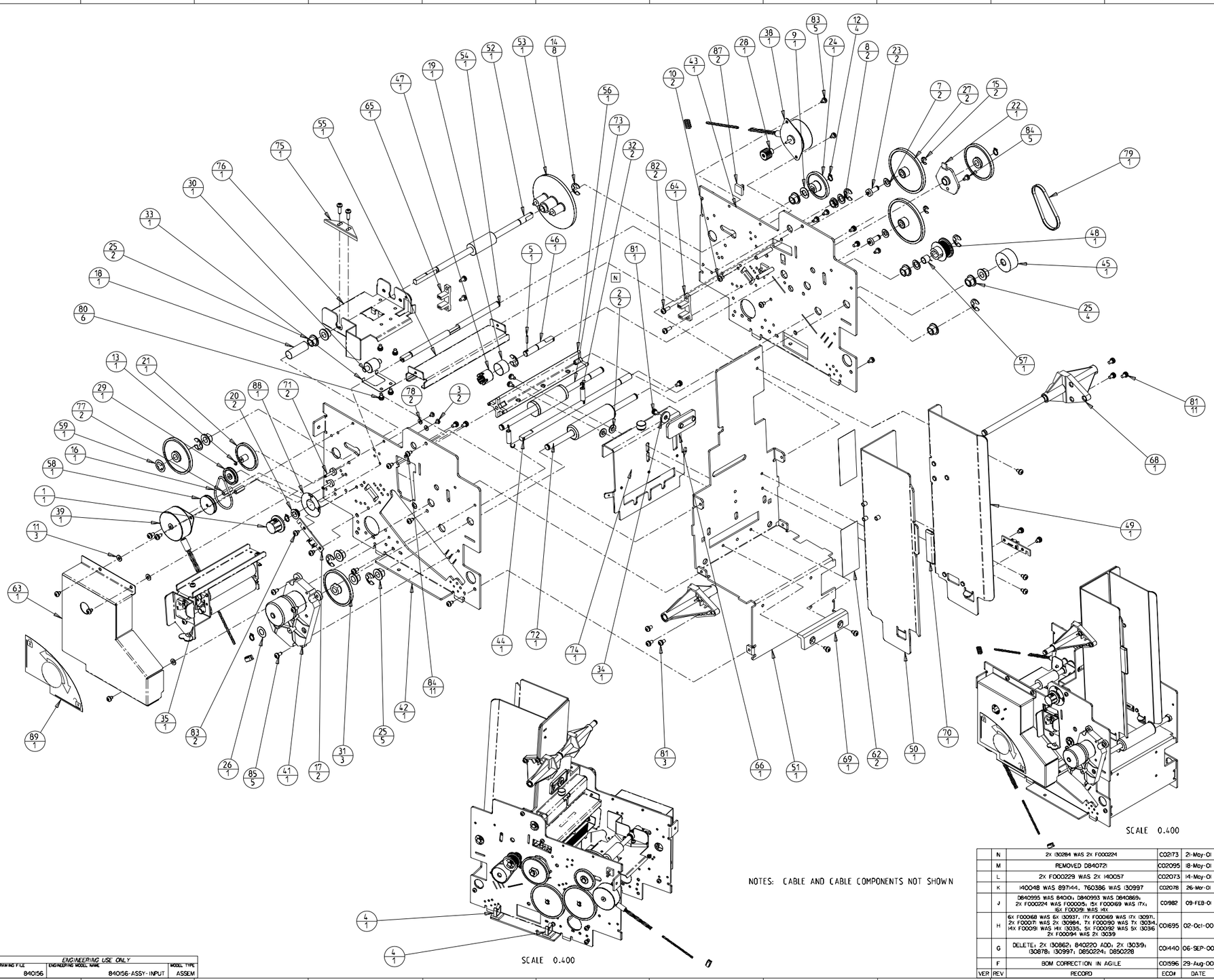
FARGO ELECTRONICS, INCORPORATED

DESCRIPTION: ASY PRINT-HEAD — 1 / 1

ASSY DWG | PROJECT: HD7XX | ASSY PART NUMBER: D840854 | ITEM NUMBER: D840854

ENGINEERING USE ONLY

DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
D840854	D840854-ASY PRINT-HEAD	ASSEM



ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	1	130209	PART	KNOB, 3/4DX1/2H, 1/4SHAFT, SET SCREW
N 2	2	130284	PART	SHOULDER WASHER SW5827
3	2	130302	PART	SCREW-M2X3 PPH
4	2	130862	PART	CLAMP-CABLE 1
5	1	130866	PART	PIN-ROLL .062 X .440
6	1	130878	PART	CLAMP-CABLE
7	2	130950	PART	WASHER-SPRING .193 ID .375 OD .004 THK
8	2	130951	PART	WASHER-SPRING.269ID.42300.006THK
9	1	130969	PART	WASHER-SPRING .256 ID .485 OD .007 THK
10	2	130982	PART	SCREW-M2X4 PPH
11	3	140040	PART	WASHER 3MM FLAT
12	4	140048	PART	RETAINING RING-EXT E .25 IN SHFT
13	1	140061	PART	RETAINING RING-EXT E .094 IN SHFT
14	8	140062	PART	RETAINING RING-EXT E .250 IN SHFT
15	2	140063	PART	RETAINING RING-EXT E .188 IN SHFT
16	1	140212	PART	O-RING 1--024
17	2	140407	ASSEMBLY	ASY-SENSOR BOARD
18	1	150074	PART	SPRING - COMP .480 X 1.000 X .036
19	1	150096	PART	SPRING - COMP .360 X .563 X .026
20	2	150101	PART	BUSHING-NYLINER .250
21	1	760288	PART	GEAR-RIBBON-IDLER
22	1	760292	PART	MOUNT-SHAFT RHS
23	2	760316	PART	POST-IDLER GEAR
24	1	760330	PART	GEAR-HEADLIFT
25	11	760343	PART	BEARING DRIVE ROLLER
26	1	760386	PART	SPACER-CLUTCH
27	2	760401	PART	GEAR-IDLER
28	1	760406	ASSEMBLY	PINION-MOTOR
29	1	771687	PART	PULLEY GEAR COMBO
30	1	810236	PART	ROLLER-CARD IDLER
31	3	810271	PART	GEAR-CARD FEED SHAFT
32	2	810273111	PART	SPRING-LID LIFT
33	1	810480	PART	SPRING-CARD IDLER
34	1	810693	PART	SPACER-CARD SEPARATOR
35	1	840102	ASSEMBLY	ASSY CLEANING ROLLER
36	1	840114	ASSEMBLY	ASY-CABLE HARNESS IPH SNR LAM
37	1	840120	ASSEMBLY	ASY-CABLE HARNESS IPH MTR LAM
38	1	840124	ASSEMBLY	ASY MTR 150281 MTR FLP CRD"
39	1	840125	ASSEMBLY	ASY MTR 150281 MTR FLP CRD "
40	1	840176	ASSEMBLY	ASY CBL FLEX CT HDR-HDR
41	1	840198	ASSEMBLY	ASY-CARD FEED
42	1	840200	PART	Sideplate-Input Front
43	1	840201	PART	SIDEPLATE INPUT REAR
44	1	840211	PART	SHAFT_FEED
45	1	840212	PART	840212- PULLEY_CARD_FEED
46	1	840213	PART	SHAFT-CLN_ROLLER_DRIVE
47	1	840214	PART	HUB-CLEANING_ROLLER
48	1	840215	PART	PULLEY ONE WAY 28 GRV
49	1	840217	ASSEMBLY	GUIDE FIXED
50	1	840218	ASSEMBLY	GUIDE-ADJUST
51	1	840219	PART	BASE-BACKPLATE
52	1	840220	PART	ROLLER - CARD INVERTER
53	1	840221	PART	GEAR-TABLE_FLIP
54	1	840225	PART	SHAFT FEED ADJ
55	1	840227	PART	BRACKET-CLEANING ROLLER
56	1	840239	PART	CROSS MEMBER 1X1
57	1	840285	PART	SPRING_CLUTCH
58	1	840287	PART	PULLEY_MOTOR
59	1	897144	PART	RETAINER CLIP
60	1	D840518	ASSEMBLY	ASY CBL CT-CT, SNR CRD LOW
61	1	D840519	ASSEMBLY	ASY CBL CT-CT, SNR TBL PSN
62	2	D840608	PART	BACKING-GUIDE_BOTTOM
63	1	D840614	PART	PLATE GUARD PULLEY
64	1	D840624	ASSEMBLY	ASY-SNR_E000002_SNR_CRD_FED
65	1	D840625	ASSEMBLY	ASY-SNR_E000002_SNR_CRD_FTB
66	1	D840667	PART	GUIDE-ADJUSTMENT, OUTPUT
67	1	D840668	PART	guide-PILLOW BLOCK-generic
68	1	D840684	ASSEMBLY	ASSY-GUIDE, PILLOW-BLOCK
69	1	D840720	PART	BRACKET-CARD SUPPORT
70	1	D840756	PART	CAP-VINYL GUIDE ADJUST
71	2	D840867	PART	POST-IDLER FLM DRIVE
72	1	D840926	ASSEMBLY	ROLLER CARD SUPPORT
73	1	D840993	ASSEMBLY	ROLLER - INPUT FEED
74	1	D840995	ASSEMBLY	ASY-INPUT SEPARATOR ADJUST
75	1	D850224	PART	BLOCK-CARD ALIGNMENT
76	1	D850228	PART	PLATE-CARD INVERSION
77	2	F000071	PART	STANDOFF-HEX, M3, F-F, 12MM LG
78	2	F000132	PART	WASHER_.084ID_X_.2190D_X_.025
79	1	F000134	PART	BELT-62 GRV 125 W MXL
80	6	F000168	PART	SCREW-M3X4_TPH_ZP_SEM
81	15	F000169	PART	SCREW-M3X5_TPH_ZP_SEM
82	2	F000171	PART	SCREW-M3X8_TPH_ZP_SEM
83	7	F000190	PART	SCREW-M3X4 TPH ZP TAPTITE
84	16	F000191	PART	SCREW-M3X5 TPH ZP TAPTITE
85	5	F000192	PART	SCREW-M3X6 TPH ZP TAPTITE
86	2	F000194	PART	SCREW-M3X10 TPH ZP TAPTITE
87	2	F000229	PART	CLAMP-CABLE
88	1	L000022	PART	LABEL CARD THICKNESS
89	1	L000024	PART	LABEL RELEASE LEVER

NOTES: CABLE AND CABLE COMPONENTS NOT SHOWN

VER	REV	RECORD	ECO#	DATE	APPR
	N	2x 130284 WAS 2x F000224	C02173	21-May-01	BDJ
	M	REMOVED D840721	C02095	18-May-01	CJ
	L	2x F000229 WAS 2x 140057	C02073	14-May-01	CJ
	K	140048 WAS 897144, 760386 WAS 130997	C02078	26-Mar-01	CJ
	J	D840995 WAS B4010; D840993 WAS D840869; 2X F000224 WAS F000015; 15X F000169 WAS 17X; 6X F000191 WAS 14X	C0982	09-FEB-01	BDJ
	H	6X F000168 WAS 6X 130937, 17X F000169 WAS 17X 130971; 2X F000171 WAS 2X 130984, 7X F000190 WAS 7X 130314; 14X F000191 WAS 14X 130315, 5X F000192 WAS 5X 130316; 2X F000194 WAS 2X 130319	C01695	02-Oct-00	KB
	G	DELETE; 2X 130862; 840220 ADD; 2X 130319; 130878; 130997; D850224; D850228	C01440	06-SEP-00	TJK
	F	BOM CORRECTION IN AGILE	C01596	29-Aug-00	KB

MATERIAL

FINISH

DRAWN BY: JS

DATE: 14-Apr-99

DIM UNITS: inch

SCALE: 0.500

SIZE: D

FARGO ELECTRONICS, INCORPORATED

DESCRIPTION: ASSY INPUT 1/1

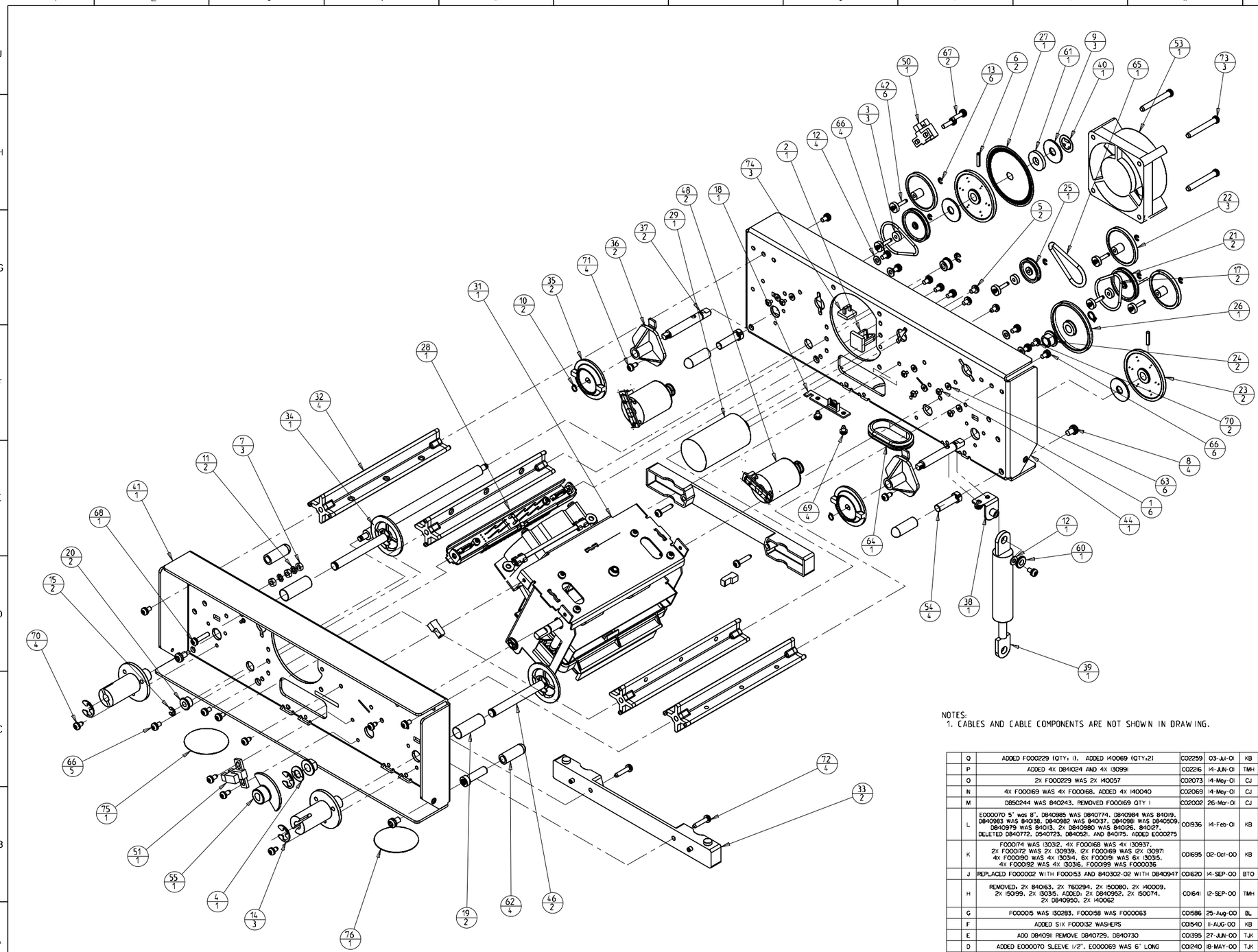
PROJECT: HD7XX

PART NUMBER: 840156

ITEM NUMBER: 840156

ENGINEERING USE ONLY

DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
840156	840156-ASSY-INPUT	ASSEM



ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	6	130302	PART	SCREW-M2X3 PPH
2	1	130862	PART	CLAMP-CABLE 1
3	3	130884	PART	WASHER .097 ID .300 OD .090 THK
4	1	130969	PART	WASHER-SPRING .256 ID .485 OD .007 THK
5	2	130973	PART	SCREW-M2.5X4 PPH
6	2	130975	PART	PIN-ROLL .094 X .440
7	3	130985	PART	NUT - M3 X 0.5 KEPS CZ
8	4	130991	PART	SCREW-M4X6 PPH SEM
9	3	130997	PART	WASHER .250 ID .750 OD .045 THK
10	2	140009	PART	RETAINING RING-EXT E .188 IN SHFT
11	2	140012	PART	WASHER-M3 EXT TOOTH LOCKING
12	5	140040	PART	WASHER 3MM FLAT
13	6	140061	PART	RETAINING RING-EXT E .094 IN SHFT
14	3	140062	PART	RETAINING RING-EXT E .250 IN SHFT
15	2	140065	PART	RETAINING RING-EXT E .156 IN SHFT
O 16	4	140069	PART	TIE WRAP
17	2	140212	PART	O-RING 1--024
18	1	140407	ASSEMBLY	ASY-SENSOR BOARD
19	2	150074	PART	SPRING - COMP .480 X 1.000 X .036
20	2	760219	PART	BEARING-RIBBON ROLLER
21	2	760287	PART	PULLEY GEAR COMBO
22	3	760288	PART	GEAR-RIBBON-IDLER
23	2	760289	PART	GEAR-RIBBON DRIVE
24	2	760343	PART	BEARING DRIVE ROLLER
25	1	771687	PART	PULLEY GEAR COMBO
26	1	810271	PART	GEAR-CARD FEED SHAFT
27	1	810492	PART	ENCODER WHEEL
28	1	840108	ASSEMBLY	ASSY-RIBBON SENSOR ARRAY
29	1	840131	ASSEMBLY	ASY-MTR 150291 CT 5.25"
30	1	840143	ASSEMBLY	CABLE PRINTHEAD ASY
31	1	840160	ASSEMBLY	ASY-PRN HEADLIFT
32	4	840239	PART	CROSS MEMBER 1X1
33	2	840240	PART	BLOCK-REF TOP
34	1	840318	PART	ROLLER-RIBBON INTM
35	2	840324	PART	HUB-RIBBON DRIVEN
36	2	840326	PART	GUIDE-RIBBON SHAFT REAR
37	2	840327	PART	SHAFT RIBBON DRIVEN
38	1	840351	PART	BRACKET-MODULE DAMPER
39	1	840366	PART	SPRING - GAS
40	1	897144	PART	RETAINER CLIP
41	1	840302- 01	PART	SIDEPLATE TOP FRAME
42	6	D840867	PART	POST-IDLER FLM DRIVE
43	1	D840911	ASSEMBLY	ASY CBL 1/8 BRAID X 17.50
44	1	D840947	PART	SIDEPLATE-BACK PRINT FRAME
45	2	D840950	PART	BRACKET-RBN SHAFT
46	2	D840952	ASSEMBLY	ASY-HUB
47	1	D840979	ASSEMBLY	ASY-CABLE HARNESS TOP SNR ILK
48	2	D840980	ASSEMBLY	ASY-MTR A000124 MTR RIB
49	1	D840981	ASSEMBLY	ASY-CABLE HARNESS TOP SNR RIB
50	1	D840982	ASSEMBLY	ASY-SNR 070048 RIB SPY
51	1	D840983	ASSEMBLY	ASY-SNR 070048 PRN PSN
52	1	D840984	ASSEMBLY	ASY-CABLE HARNESS TOP MTR PRN
53	1	D840985	ASSEMBLY	ASY FAN 150322 FAN SIDE
54	4	D841024	PART	POST-LATCH_STANDOFF
55	1	D850244	PART	FLAG - SENSOR
56	8.5 in	E000068	PART	SLEEVE BRAIDED 3/16"
57	8 in	E000069	PART	SLEEVE BRAIDED 5/16"
58	5 in	E000070	PART	SLEEVE BRAIDED 1/2"
59	1	E000275	PART	IND FERRITE BEAD SNAP ON .51" ID
60	1	F000015	PART	WASHER-SHOULDER, NYLON
61	1	F000062	PART	WASHER EDPM 1/4 X 5/8 X 3/32
62	4	F000089	PART	CAP VINYL .207 SHAFT
63	6	F000132	PART	WASHER_.084ID_X_.219OD_X_.025
64	1	F000153	PART	GROMMET 31/32 ID X 1.50 OD
65	1	F000158	PART	O-RING 0.103 X 1.063
66	15	F000169	PART	SCREW-M3X5_TPH_ZP_SEM
67	2	F000172	PART	SCREW-M3X10_TPH_ZP_SEM
68	1	F000174	PART	SCREW-M3X14_TPH_ZP_SEM
69	4	F000190	PART	SCREW_M3X4_TPH_TAPTITE
70	6	F000191	PART	SCREW-M3X5 TPH ZP TAPTITE
71	4	F000192	PART	SCREW-M3X6 TPH ZP TAPTITE
72	4	F000196	PART	SCREW-M3X14 TPH ZP TAPTITE
73	3	F000199	PART	SCREW-M4X30 TPH ZP TAPTITE
O 74	3	F000229	PART	CLAMP-CABLE
75	1	L000031	PART	LABEL PRN RIB LOAD SUPPLY
76	1	L000032	PART	LABEL-PRINT RIB LOAD TUP

NOTES:
1. CABLES AND CABLE COMPONENTS ARE NOT SHOWN IN DRAWING.

VER	REV	RECORD	ECO#	DATE	APPR
	Q	ADDED F000229 (QTY: 1). ADDED 140069 (QTY:2)	C02259	03-Jul-01	KB
	P	ADDED 4X D841024 AND 4X 130991	C02216	14-JUN-01	TMH
	O	2X F000229 WAS 2X 140057	C02073	14-May-01	CJ
	N	4X F000169 WAS 4X F000168, ADDED 4X 140040	C02069	14-May-01	CJ
	M	D850244 WAS 840243, REMOVED F000169 QTY 1	C02002	26-Mar-01	CJ
	L	E000070 5" was 8", D840983 WAS D840774, D840984 WAS 841019, D840983 WAS 840138, D840982 WAS 841037, D840981 WAS D840509, D840979 WAS 840113, 2X D840980 WAS 840126, 840127, DELETED D840772, D540723, D840521, AND 840175. ADDED E000275	C01936	14-Feb-01	KB
	K	F000174 WAS 130312, 4X F000168 WAS 4X 130937, 2X F000172 WAS 2X 130939, 2X F000169 WAS 12X 130971 4X F000190 WAS 4X 130314, 6X F000191 WAS 6X 130315, 4X F000192 WAS 4X 130316, F000199 WAS F000036	C01695	02-Oct-00	KB
	J	REPLACED F000002 WITH F000153 AND 840302-02 WITH D840947	C01620	14-SEP-00	BTO
	H	REMOVED: 2X 840163, 2X 760294, 2X 150080, 2X 140009, 2X 150199, 2X 130315, ADDED: 2X D840952, 2X 150074, 2X D840950, 2X 140062	C01641	12-SEP-00	TMH
	G	F000015 WAS 130283, F000158 WAS F000063	C01586	25-Aug-00	BL
	F	ADDED SIX F000132 WASHERS	C01540	11-AUG-00	KB
	E	ADD D840911 REMOVE D840729, D840730	C01395	27-JUN-00	TJK
	D	ADDED E000070 SLEEVE 1/2", E000069 WAS 6" LONG	C01240	18-MAY-00	TJK
	C	130316 QTY OF 4 WAS QTY OF 2, REMOVED 130938 QTY 4, ADDED 130939 QTY 2 AND 130969 QTY OF 1, 140069 QTY OF 2 WAS QTY 1, E000068 8.5" WAS 7".	C0122	24-APR-00	DJC

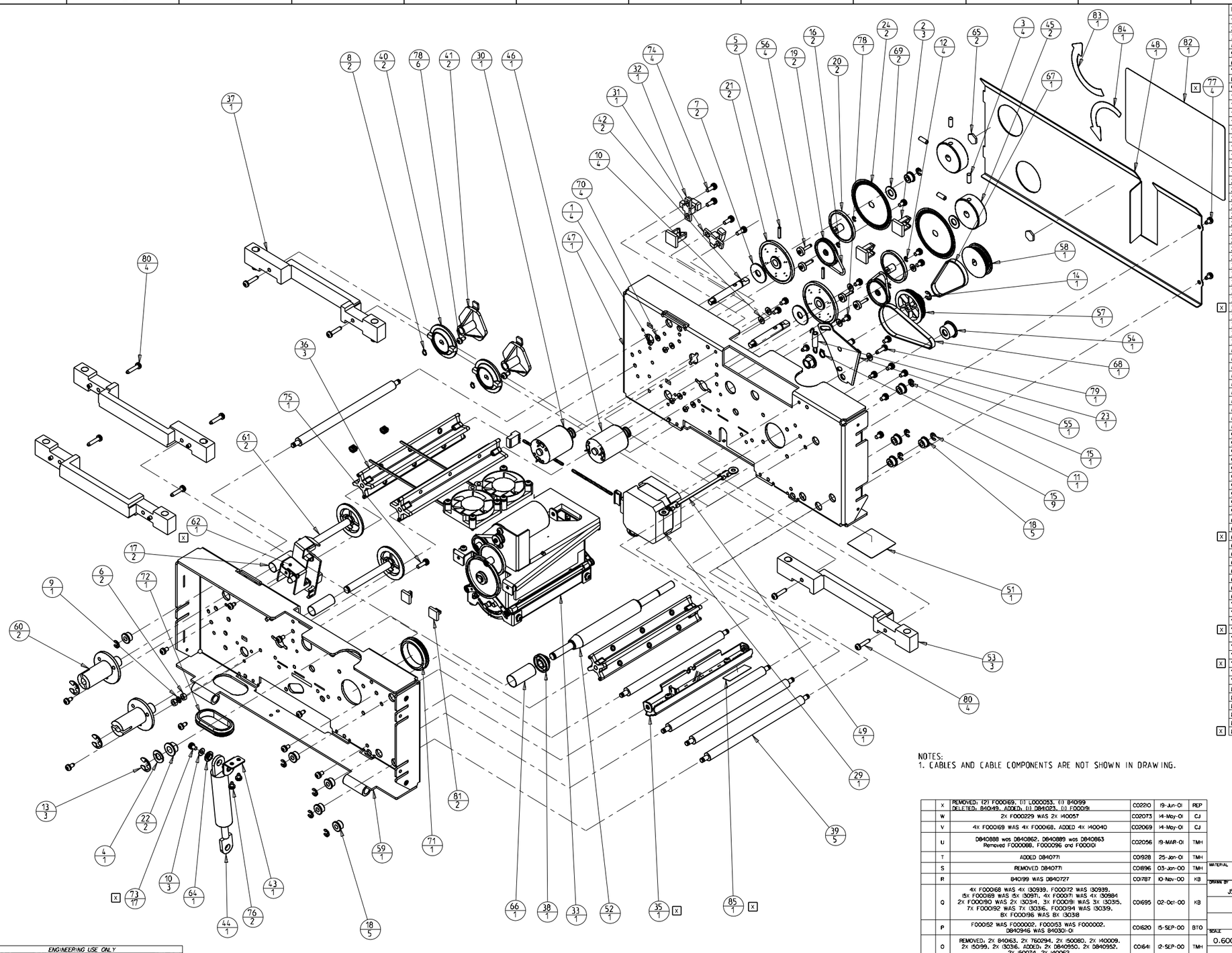
ENGINEERING USE ONLY		
DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
840153	840153 ASSY-TOP PRINT FRAME	ASSEM

MATERIAL	FINISH
DRAWN BY: JS	DATE: 26-Apr-99
SHP UNITS: inch	
SCALE: 0.700	SIZE: D
-	

FARGO ELECTRONICS, INCORPORATED

DESCRIPTION: ASY-BASE TOP FRAME 1/1

PROJECT	PART NUMBER	ITEM NUMBER
HD7XX	840153	840153



ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	4	130302	PART	SCREW-M2X3 PPH
2	3	130878	PART	CLAMP-CABLE
3	4	130935	PART	SET SCREW 6-32 X 3/8 CUP
4	1	130969	PART	WASHER-SPRING .256 ID .485 OD .007 THK
5	2	130975	PART	PIN-ROLL .094 X .440
6	2	130985	PART	NUT - M3 X 0.5 KEPS CZ
7	2	130997	PART	WASHER .250 ID .750 OD .045 THK
8	2	140009	PART	RETAINING RING-EXT E .188 IN SHFT
9	1	140012	PART	WASHER-M3 EXT TOOTH LOCKING
10	7	140040	PART	WASHER 3MM FLAT
11	1	140048	PART	RETAINING RING-EXT E .25 IN SHFT
12	4	140061	PART	RETAINING RING-EXT E .094 IN SHFT
13	3	140062	PART	RETAINING RING-EXT E .250 IN SHFT
14	1	140063	PART	RETAINING RING-EXT E .188 IN SHFT
15	10	140065	PART	RETAINING RING-EXT E .156 IN SHFT
16	2	140212	PART	O-RING 1--024
17	2	150074	PART	SPRING - COMP .480 X 1.000 X .036
18	10	760219	PART	BEARING-RIBBON ROLLER
19	2	760287	PART	PULLEY GEAR COMBO
20	2	760288	PART	GEAR-RIBBON-IDLER
21	2	760289	PART	GEAR-RIBBON DRIVE
22	2	760343	PART	BEARING DRIVE ROLLER
23	1	810273.11	PART	SPRING-LID LIFT
24	2	810492	PART	ENCODER WHEEL
25	1	840111	ASSEMBLY	ASY-CABLE HARNESS MID SNR PRN
26	1	840112	ASSEMBLY	ASY-CABLE HARNESS MID SNR LAM
27	1	840117	ASSEMBLY	ASY-CABLE HARNESS MID MTR PRN
28	1	840118	ASSEMBLY	ASY-CABLE HARNESS MID MTR LAM
29	1	840123	ASSEMBLY	ASY-MTR STP 150292 MTA 30
30	1	840128	ASSEMBLY	ASY-MTR 150285 MTR ITM SPY
31	1	840135	ASSEMBLY	ASY-SNR 070048 CT 17.50"
32	1	840136	ASSEMBLY	ASY-SNR 070048 CT 17.50"
33	1	840159	ASSEMBLY	ASSY LAMINATION
34	1	840170	ASSEMBLY	ASY CBL CT-CT, SNR ITM LAM
X 35	1	840199	ASSEMBLY	ASSY-PRN SNSR ARRAY LAM
36	3	840239	PART	CROSS MEMBER 1X1
37	1	840242	PART	BLOCK-REF MID
38	1	840246	PART	GUIDE HEAD LOCATION
39	5	840318	PART	ROLLER-RIBBON INTM
40	2	840324	PART	HUB-RIBBON DRIVEN
41	2	840326	PART	GUIDE-RIBBON SHAFT REAR
42	2	840327	PART	SHAFT RIBBON DRIVEN
43	1	840351	PART	BRACKET-MODULE DAMPER
44	1	840366	PART	SPRING - GAS
45	2	D000064	PART	HANDWHEEL
46	1	D840522	ASSEMBLY	ASY-MTR 150285 MTR ITM TUP
47	1	D840718	PART	SIDEPLATE-MID-FRAME REAR
48	1	D840719	PART	PLATE-COVER PULLEY MID
49	1	D840729	ASSEMBLY	ASY CBL 1/8 BRAID X 24
50	1	D840771	ASSEMBLY	ASY-CABLE HARNESS FAN ITM
51	1	D840777	PART	LABEL HOT
52	1	D840811	PART	ROLLER-PLATEN PRINT
53	3	D840847	PART	BLOCK-REF MID NO PIN
54	1	D840861	PART	PULLEY-FHT-1.40.GRV
55	1	D840864	ASSEMBLY	PLATE-FHT BELT TENSION
56	4	D840867	PART	POST-IDLER FLM DRIVE
57	1	D840888	PART	PULLEY-FHT-1.96 X 40 TOOTH
58	1	D840889	PART	PULLEY-FHT-1, 80 TOOTH
59	1	D840946	PART	SIDEPLATE-LEFT MID PRINT
60	2	D840950	PART	BRACKET-RBN SHAFT
61	2	D840952	ASSEMBLY	ASY-HUB
X 62	1	D841023	ASSEMBLY	ASY-SLOTTED OPT PRN
63	5.0 in	E000070	PART	SLEEVE BRAIDED 1/2"
64	1	F000015	PART	WASHER-SHOULDER, NYLON
65	2	F000051	PART	BUMPER-063X.433_HEX
66	1	F000080	PART	SPRING-COMP .468 X 1.00 X .030
67	1	F000093	PART	BELT-136T_FHT-1X4MM
68	1	F000094	PART	BELT-163T_FHT-1X4MM
69	2	F000097	PART	WASHER-RUBBER- .250 ID .500 OD .030 THK
70	4	F000132	PART	WASHER_.084ID_X_.219OD_X_.025
71	1	F000152	PART	GROMMET 55/64 ID X 1 3/16 OD
72	1	F000153	PART	GROMMET 31/32 ID X 1.50 OD
X 73	17	F000169	PART	SCREW-M3X5_TPH_ZP_SEM
74	4	F000171	PART	SCREW-M3X8_TPH_ZP_SEM
75	1	F000172	PART	SCREW-M3X10_TPH_ZP_SEM
76	2	F000190	PART	SCREW-M3X4 TPH ZP TAPTITE
X 77	4	F000191	PART	SCREW-M3X5 TPH ZP TAPTITE
78	7	F000192	PART	SCREW-M3X6 TPH ZP TAPTITE
79	1	F000194	PART	SCREW-M3X10 TPH ZP TAPTITE
80	8	F000196	PART	SCREW-M3X14 TPH ZP TAPTITE
81	2	F000229	PART	CLAMP-CABLE
82	1	L000049	PART	LABEL FILM LOAD
83	1	L000051	PART	LABEL HDP FILM TENSION ARROW
84	1	L000052	PART	LABEL HDP FILM TENSION ARROW CW
X 85	1	L000053	PART	LABEL FILM ALIGNMENT ARROW

NOTES:
1. CABLES AND CABLE COMPONENTS ARE NOT SHOWN IN DRAWING.

VER	REV	RECORD	ECO#	DATE	APPR
	X	REMOVED; (2) F000169, (1) L000053, (1) 840199 DELETED; 840149, ADDED; (1) D841023, (1) F000191	C02210	19-Jun-01	REP
	W	2X F000229 WAS 2X 140057	C02073	14-May-01	CJ
	V	4X F000169 WAS 4X F000168, ADDED 4X 140040	C02069	14-May-01	CJ
	U	D840888 was D840862, D840889 was D840863 Removed F000088, F000096 and F000101	C02056	19-MAR-01	TMH
	T	ADDED D840771	C01928	25-Jan-01	TMH
	S	REMOVED D840771	C01896	03-Jan-00	TMH
	R	840199 WAS D840727	C01787	10-Nov-00	KB
	Q	4X F000168 WAS 4X 130939, F000172 WAS 130939, 15X F000169 WAS 15X 130971, 4X F000171 WAS 4X 130984 2X F000190 WAS 2X 130314, 3X F000191 WAS 3X 130315, 7X F000192 WAS 7X 130316, F000194 WAS 130319, 8X F000196 WAS 8X 130318	C01695	02-Oct-00	KB
	P	F000152 WAS F000002, F000153 WAS F000002, D840946 WAS 840301-01	C01620	15-SEP-00	BTO
	O	REMOVED; 2X 840163, 2X 760294, 2X 150080, 2X 140009, 2X 150199, 2X 130316, ADDED; 2X D840950, 2X D840952, 2X 150074, 2X 140062.	C01641	12-SEP-00	TMH

ENGINEERING USE ONLY		
DRAWING FILE	ENGINEERING MODEL NAME	MODEL TYPE
840152	840152 ASSY-MID PRINT FRAME	ASSEM

MATERIAL | FINISH

DRAWN BY: JS | DATE: 28-Apr-99 | DIM UNITS: inch | SCALE: 0.600 | SIZE: D

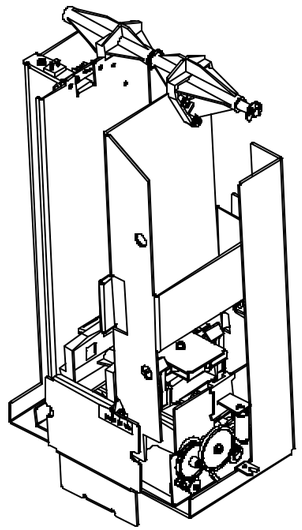
FARGO ELECTRONICS, INCORPORATED

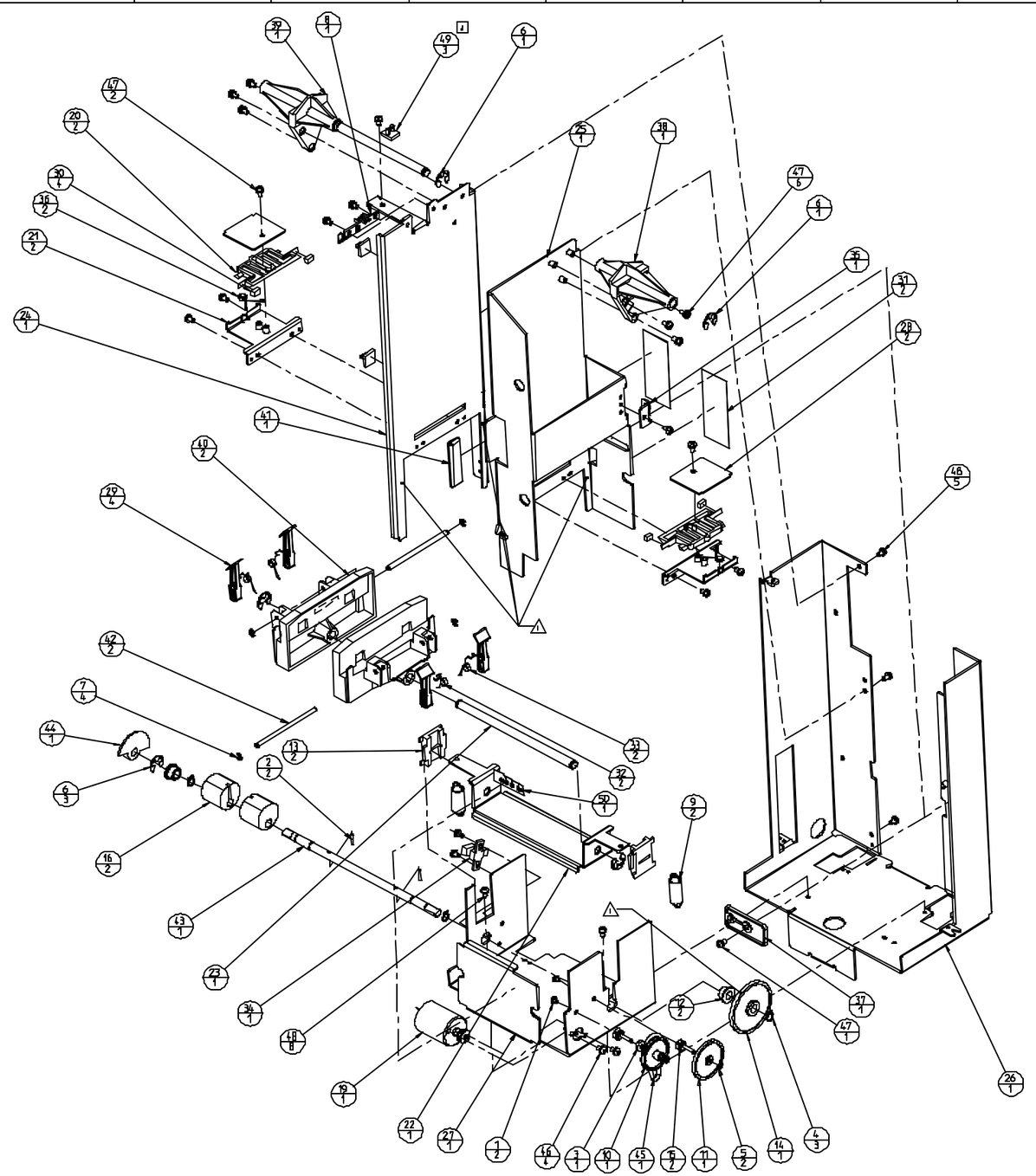
DESCRIPTION: ASSY-MID PRINT FRAME 1/1

PROJECT	PART NUMBER	ITEM NUMBER
HD7XX	840152	840152

NOTES:

⚠ LIGHTLY GREASE ASSEMBLY AT INDICATED POSITIONS.





ITEM	QTY	ITEM NUMBER	TYPE	DESCRIPTION
1	2	130502	PART	SCREW-M2X3 PPH
2	2	130866	PART	PIN-ROLL .062 X .100
3	1	130884	PART	WASHER .097 ID .300 OD .090 THK
4	3	140048	PART	RETAINING RING-EXT C .25 IN SHFT
5	2	140061	PART	RETAINING RING-EXT E .094 IN SHFT
6	5	140062	PART	RETAINING RING-EXT E .250 IN SHFT
7	4	140064	PART	RETAINING RING-EXT E .125 IN SHFT
8	1	140407	ASSEMBLY	ASY-SENSOR BOARD
9	2	131900	PART	SPRING-EXT .375 X 1.125 X .037
10	1	760287	PART	PULLEY GEAR COMBD
11	1	760288	PART	GEAR-RIBBON-IDLER
12	2	760343	PART	BEARING DRIVE ROLLER
13	2	810244	PART	BEARING SLIDE
14	1	840271	PART	GEAR-CARD FEED SHAFT
15	2	820505	PART	IDLER POST-HEAD LIFT GEAR
16	2	820520	PART	CAM-LAM
17	1	840113	ASSEMBLY	ASY CBL HRNS DPH SNR LAM
18	1	840121	ASSEMBLY	ASY CBL HRNS DHP MTR LAM
19	1	840130	ASSEMBLY	ASY-MTR 150285 MTR DHP LFT
20	2	D840191	PART	PAWL-CARD LIFT
21	2	D840192	PART	BRACKET-LIFT MOUNT
22	1	D840193	PART	BRACKET-CAM LIFT
23	1	D840194	PART	SHAFT-LIFT GUIDE
24	1	D840195	PART	BRACKET-EDGE_GUIDE-FIX
25	1	D840196	PART	BRACKET-CODE GUIDE ADJ
26	1	D840198	PART	STRUCTURE-STACK MODULE
27	1	D840199	PART	BRACKET-CAM GUIDE
28	2	D840600	PART	PLATE-LIFT PAWL COVER
29	4	D840601	PART	RATCHET-STACK
30	4	D840605	PART	PAD-PAWL_STOP
31	2	D840608	PART	BACKING-GUIDE_BOTTOM
32	2	D840609	PART	SPRING-RATCHET_RETURN_L
33	2	D840610	PART	SPRING-RATCHET_RETURN_R
34	1	D840646	ASSEMBLY	ASY-SNR 070068 SNR-DHP-PSN
35	1	D840650	PART	LATCH-CARD DOOR
36	2	D840665	PART	SPRING-PAWL RETURN
37	1	D840667	PART	GUIDE-ADJUSTMENT, OUTPUT
38	1	D840668	PART	GUIDE-PILLOW BLOCK
39	1	D840684	ASSEMBLY	ASSY-GUIDE, PILLOW-BLOCK
40	2	D840685	PART	BLOCK LIFT MOLDED
41	1	D840756	PART	CAP-VINYL GUIDE ADJUST
42	2	D840910	PART	SHAFT RATCHET PIVOT
43	1	D841016	PART	SHAFT-CARD LIFT
44	1	D850244	PART	FLAG - SENSOR
45	1	F0010158	PART	O-RING 0.103 X 1.003
46	4	F0010458	PART	SCREW-M3X4_TPH_ZP_SEM
47	9	F0010469	PART	SCREW-M3X5_TPH_ZP_SEM
48	13	F0010991	PART	SCREW-M3X5 TPH ZP TAPTITE
J 49	3	F0010229	PART	CLAMP-CABLE
50	1	L0001123	PART	LABEL-OUTPUT STACKER POSN

	J	3X F0010228 WAS 3X H0087	C020173	14-May-04 CJ
	H	D850244 WAS 8408245, REMOVED F0010458 QTY 1 D840685 WAS D840606	C020702	25-Mar-04 CJ
	G	REMOVED F0010458 QTY 1	C018229	08-Jan-04 CJ
	F	ADDED NOTE 1 AND 2X D840608	C018825	29-NOV-03 KB
	E	SWITCHED ORIENTATION OF GEAR	C017396	18-NOV-03 BTD
	D	ADDED L000123	D17768	27-OCT-03 BDJ
	C	4X F0010991 WAS 7X H0087, 10X F0010458 WAS 2X H0087, 9X F0010458 WAS 14X H0087	C016885	08-Oct-03 KB
	B	F0010458 WAS 9 H0212	D17618	16-SEP-03 BDJ
	A	INITIAL RELEASE	C013478	28-JUN-03 DJC
VER	REV	RECORD	ECO#	DATE APPR

DRAWN BY	DATE	FARGO ELECTRONICS, INCORPORATED	This document is the property of FARGO Electronics, Inc. It contains confidential and proprietary information. It may not be copied, reproduced or disclosed to others without the written permission of FARGO Electronics, Inc.
JS	24-Aug-98		
TOLERANCE UNLESS OTHERWISE SPECIFIED			
inch			
SCALE	SIZE	DESCRIPTION	
0.1500	D	ASY-OUTPUT STACKER	1 / 1
-		PROJECT: H07XX	PART NUMBER: D840590
			ITEM NUMBER: D840590

ENGINEERING USE ONLY		
ENGINEER	DRAWING REC. TYPE	REC. TYPE
D840590	D840590 ASSY-OUTPUT STACKER	ASSEM

Section

5

Packing your HDP700 Card Printer

Follow these instructions to pack the card printer for transport.

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 pen.
3. Insert the cardboard dancer stiffener into the base module.
4. Lock the Release Lever to secure the latch mechanism.
5. Pack the printer in the original carton and packing materials.
   Be sure to enclose any necessary paperwork, test cards, etc.

Section

6

Board Level Diagnostics

6.1 Board Errors

6.1.1 EE Memory Error

An error has occurred in the permanent circuit memory. Reboot the printer. If the problem persists, the Main Print Board will need to be replaced as described in Section 4.9.3. As an alternative to replacing the Main Print Board, the chip U16 (080239) may be replaced. FARGO recommends that only a qualified electronics technician perform this procedure.

6.1.2 EE Checksum Error

An error has occurred in the permanent circuit memory. Reboot the printer. If the problem persists, the Main Print Board will need to be replaced as described in Section 4.9.3. As an alternative to replacing the Main Print Board, the chip U16 (080239) may be replaced. FARGO recommends that only a qualified electronics technician perform this procedure.

6.1.3 DRAM Memory Error

An error has occurred in the removable memory module (SIMM). Reboot the printer. If the problem persists, remove the rear cover and ensure that the SIMM (080229) is seated properly. If the memory module is not seated properly, remove the board and reinstall. If the installation appears correct, and the error persists, the SIMM (080229) on the Main Print Board will need to be replaced.

6.1.4 RAM Memory Error

An error has occurred in the permanent circuit memory. Reboot the printer. If the problem persists, the Main Print Board will need to be replaced as described in Section 4.9.3. As an alternative to replacing the Main Print Board, the chip U17 (080229) may be replaced. FARGO recommends that only a qualified electronics technician perform this procedure.

6.1.5 FPGA

An unexpected hardware error has occurred. Reboot the printer. If the problem persists, the Main Print Board will need to be replaced as described in Section 4.9.3. As an alternative to replacing the Main Print Board, the chip U2 (080066) may be replaced. FARGO recommends that only a qualified electronics technician perform this procedure.

6.1.6 Update Firmware Now

The system firmware MUST be updated for one of the following reasons:

- A previous firmware update was unsuccessful.
- Program data is corrupt.
- The printer model does not correspond with the installed firmware model number.
- The revision number of the firmware does not match on all system components.

See Appendix A for instructions on how to update the Firmware.

6.2 SENSOR TESTING

Check the voltage to determine if a sensor is working.

Test the voltage of each sensor using ground (GRD = Chassis) to the correct pin on each connector. See Table 6-1. *Block* a slot sensor with a card. *Cover* a reflective sensor with a card.

To troubleshoot the ribbon sensor, use the RibbonTraq marks on the ribbon and Film to cover the ribbon and Film sensors. The numbers indicate the location on J65. See Table 6-1. Open the upper module to find the Ribbon Sensor orientation; the numbers indicate the location on J65.

Table 6-1 Sensor Location and Voltages

Sensor	Location	Pin	Board	Low Range VDC	High Range VDC
Upper Film Sensor	J66	8	Print	Covered .17 -.9	Uncovered 3.8-3.5
Upper Film Encoder	J66	4	Print	Unblocked .17 -.9	Blocked 3.8-3.5
Lower Film Sensor	J65	8	Lam	Covered .17 -.9	Uncovered 3.8-3.5
Lower Film Encoder	J65	4	Lam	Unblocked .17 -.9	Blocked 3.8-3.5
Card Position Sensor	J62	4	Lam	Unblocked .17 -.9	Blocked 3.8-3.5
Ribbon Encoder	J64	4	Print	Unblocked .17 -.9	Blocked 3.8-3.5
Flipper Table Card Sensor	J58	4	Lam	Unblocked .17 -.9	Blocked 3.8-3.5
Flipper Table Sensor	J64	8	Lam	Covered .17 -.9	Uncovered 3.8-3.5
Card Hopper Sensor	J64	12	Lam	Covered .17 -.9	Uncovered 3.8-3.5
Card Input Sensor	J64	4	Lam	Unblocked .17 -.9	Blocked 3.8-3.5
Printhead lift Sensor	J64	8	Print	Unblocked .17 -.9	Blocked 3.8-3.5
Transfer Lift Sensor	J62	2	Lam	Open 0	Closed +3.3
Lower Dancer Sensor	J62	8	Lam	Covered .17 -.9	Uncovered 3.8-3.5
Upper Dancer Sensor	J62	12	Lam	Covered .17 -.9	Uncovered 3.8-3.5
Ribbon Sensor (4)	J65	3	Print	Covered .17 -.9	Uncovered 3.8-3.5
Ribbon Sensor (3)	J65	5	Print	Covered .17 -.9	Uncovered 3.8-3.5
Ribbon Sensor (2)	J65	7	Print	Covered .17 -.9	Uncovered 3.8-3.5
Ribbon Sensor (1)	J65	9	Print	Covered .17 -.9	Uncovered 3.8-3.5
Latch Open Sensor	J69	4	Lam	Covered .17 -.9	Uncovered 3.8-3.5
Printer Open Sensor	J64	12	Print	Covered .17 -.9	Uncovered 3.8-3.5
Stacker Full Sensor	J63	12	Lam	Covered .17 -.9	Uncovered 3.8-3.5

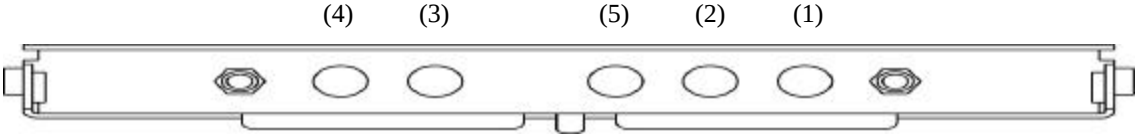


Figure 6-1 Layout of sensors on Ribbon Senor array

Section

7

7.1 Entering the LCD Menu and Selecting an Option

Figure 7-1

The MENU option is above the center softkey button. See Figure 7-3 and Figure 7-1. This allows you to access several test, setup, and reporting functions. The tree structure on page 7- 4 shows the available menu options. A description of each option and its function is included on the pages following the on-line menu.

Press the **MENU** button. The **SELECT FUNCTION** screen appears. See Figure 7-2.

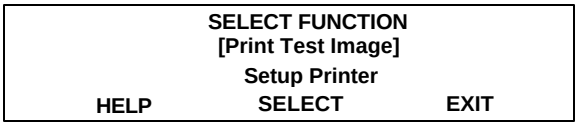


Figure 7-2

Use the scroll buttons to move up or down through the menu options. See Figure 7-3. Brackets appear on either side of the active menu option. Press the button below **SELECT** to choose an option. There are five categories to choose from: **PRINT TEST IMAGE**, **SETUP PRINTER**, **SHOW ERROR COUNT**, **SHOW CARD COUNT**, and **SYSTEM UPGRADE**.

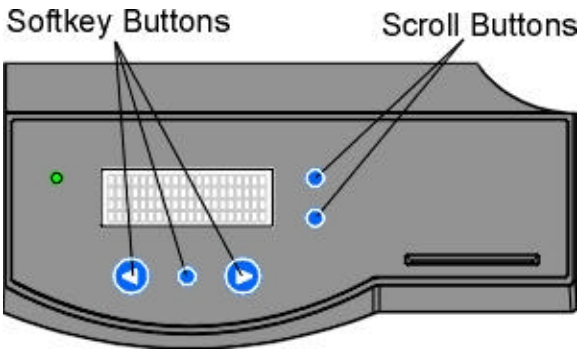


Figure 7-3

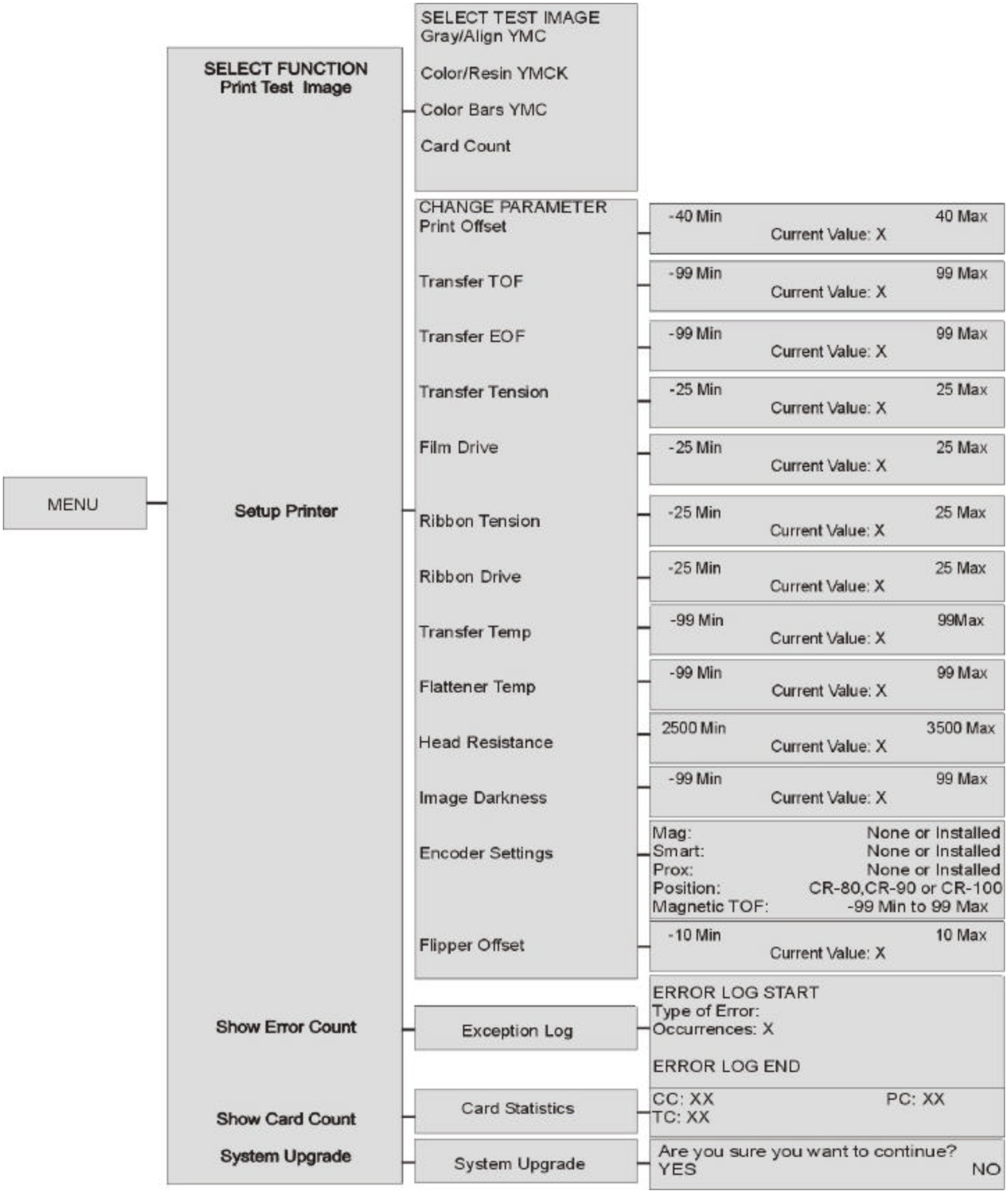


Figure 7-4

7.2 Print Test Image

Choose **PRINT TEST IMAGE** to select a preset test image. These images help to determine if the printer is functioning properly. Scroll to the desired test image from the **SELECT TEST IMAGE** options and press the **SELECT**.

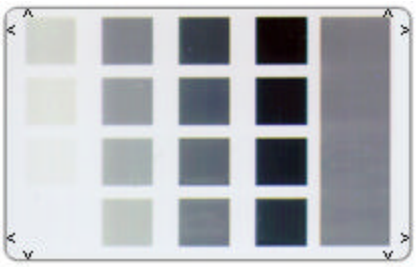


Figure 7-5

Gray/Align YMCK for HDP710 Gray/Align YMC/K for HDP720
This card is used to determine image placement and confirm that the printer is working properly. The image consists of sixteen grayscale boxes and alignment arrows. Refer to Section 7.3 for adjusting image placement. Although the boxes are gray, they are composed from a composite of YMC color panels.

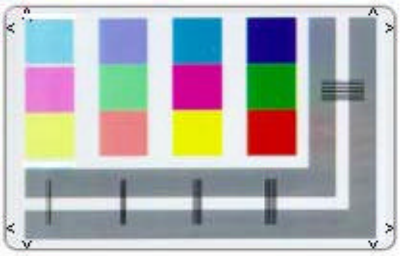


Figure 7-6

Color/Resin YMCK
This card is used to determine image placement and confirm that image colors are properly reproduced and the resin panel is printing properly. Image consists of twelve spot colors, YMC and RGB, as well as gray density bars and thin resin lines.

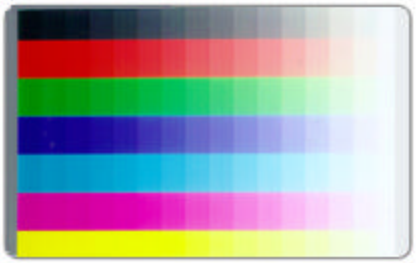


Figure 7-7

Color Bars YMC
This card is used to confirm that image colors are properly reproduced. Image consists of sixteen graduated steps of RGB and YMCK. This print will provide maximum image size, giving complete card coverage on a CR-80 sized card.

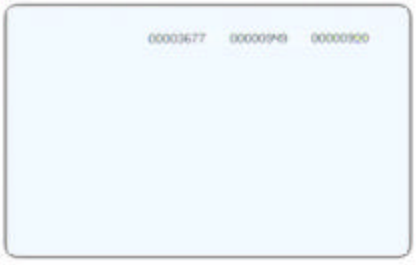


Figure 7-8

Card Count
This card is used to view counts for **Card Count (CC), Pass Count (PC),** and **Transfer Count (TC)**.

Card Count is the total number of cards the printer has produced. **Pass Count** is the total number of print passes made by the Printhead; a pass is measured each time a single ribbon panel is printed or passes beneath the Printhead. **Transfer Count** is the total number of times the printer transfers an image to a card.

7.3 Setup Printer

The printer parameters found in Setup Printer are preset at the factory and should not need to be changed unless an issue develops.

IMPORTANT

These settings are optimized at the factory and will rarely need to be changed.
***Do not** alter these settings unless directed to do so by FARGO Technical Support or instructions in this Service Manual; changing these settings may negatively affect printer output. Located on the back of the printer is a label that states the factory defaults for all settings, along with the printer serial number. Should you experience problems with the printer, these values can be used to reset the printer.*

NOTE

*If you would like to adjust **Print Offset**, **Transfer Temperature**, **Flattener Temperature**, or **Image Darkness**, attempt to make these changes through the printer driver **Image Transfer** and **Image Color** controls prior to changing the internal printer settings.*

The following four procedures **must** be performed as a single alignment process: Transfer Tension, Print Offset, Transfer TOF, and Transfer EOF. The goal of these procedures is to align the printed image and the HDP Film precisely with the edges of the card. When aligned properly, the edge of the card will fall directly between all of the Outer and Inner Alignment Arrows.

General information to know about this process follows:

The numbers being entered for the settings are measured in pixels. The number of pixels is equal to the measurement in inches multiplied by 300. For example, 0.100 in. multiplied by 300 equals 30 pixels.
(0.1 x 300 = 30)

The alignment test image is designed for setting these parameters.
Be sure to run this test after each adjustment. Run the Alignment Test Image by selecting the following options: **MENU**, **PRINT TEST IMAGE**, and **GRAY/ALIGN YMC**.

All HDP images must have an extra 0.04 in. (1mm) over bleed on all sides of the card. The Outer Alignment Arrows should fall in this area when the image is properly centered; they will be left off of the card when transferred. Refer to Figure 7-7.

Choose **MENU**, **Setup Printer**, and the setting to be changed. Change the value and press **SELECT** to save the value. If the settings are lost due to replacing the Main Print Board, set the starting values to the settings listed on the label on the back of the printer.

7.3.1 Preparing to Adjust the Print Offset, Transfer TOF, and Transfer EOF

Before starting the alignment procedures, you must first establish a baseline from which to start your adjustments.

1. Select **MENU**, **Setup Printer**,
2. Select **Print Offset**
3. Set to +40 and press **SELECT**
4. Select **Transfer TOF**
5. Set to +60 and press **SELECT**,
6. Select **Transfer EOF**
7. Set to –90 and press **SELECT**

7.3.2 Adjusting the Transfer Tension

This procedure positions the image correctly on the card. Refer to Section 7.3.1 for proper sequence.

1. Choose **MENU**, **Print Test Image**, and **Gray/Align YMC** to print a test card.
2. Record the **Transfer Tension** value on the test card last printed.
3. Examine the test card.
4. Select MENU, Setup Printer, and Transfer Tension.

NOTE

Reducing the Transfer Tension too much may cause slack in the Film take-up; this will be evidenced by a wrinkling noise and extra Film take-up during the release phase. Increase the Transfer Tension if this occurs. There may be a snapping or clunking sound during Film take-up if it is too tight. Errors may occur in either case.

5. Press **SELECT** to save the value.
6. Print a test card as described in step 1.
7. Repeat steps 1 to 7 until the Film is applied smoothly to the card — without wrinkles or creases.

7.3.3 Aligning the Print Offset

This procedure positions the image correctly on the HDP Film. Refer to Section 7.3.1 for proper sequence.

1. Choose **MENU**, **Print Test Image**, and **Gray/Align YMC** to print a test card.
2. Examine the test card. The open end of the Outer Alignment Arrows should appear at the edge of the Film (shown below as a dotted line). If your test card does look like Figure 7-9, go to step 5 to adjust the Print Offset.
3. Select MENU, Setup Printer, and Print Offset.
4. Record the **Print Offset** value on the test card last printed.

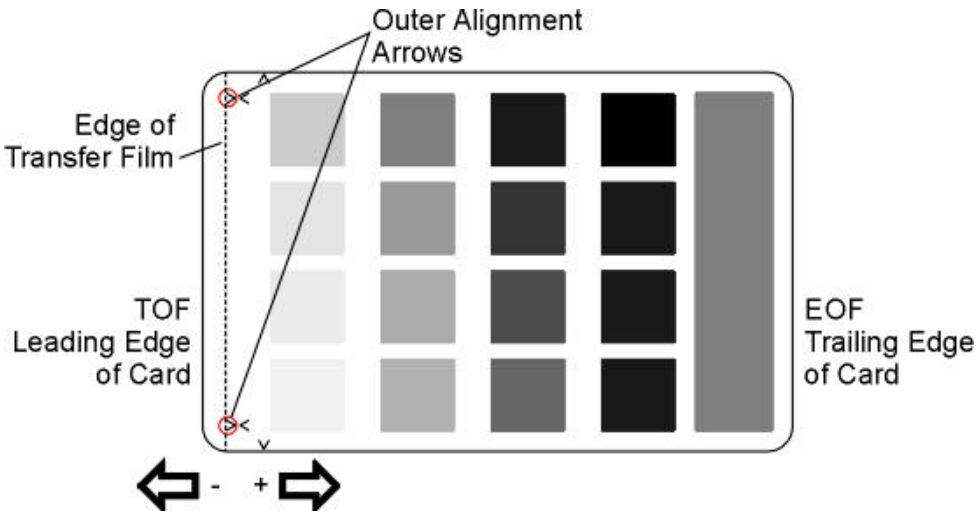


Figure 7-9

5. Measure the distance from the top edge of the transferred area to the top edge of the inward pointing arrows.
6. Calculate the **Print Offset** value

Inches: 40 – (Distance x 300):
Millimeters: 40 – (Distance x 11.8):
Example: Inches: 40 – (.020 x 300) = 34:

7. Adjust the **Print Offset** value.
8. Press **SELECT** to save the value.
9. Print a test card as described in step 1.
10. Repeat steps 1 to 9 until the test image is correctly positioned. Refer to Figure 7-2.

NOTE:

If further adjustment is needed, decrease the Print Offset value to move the printed image toward the leading edge of the card; increase the Print Offset value to move the printed image toward the trailing edge of the card. Remember, ±30 pixels will move your image 0.100 in. or 3.84mm.

7.3.4 Setting the Transfer TOF

This procedure positions the HDP Film correctly on the leading edge of the card. Refer to Section 7.3.1 for proper sequence.

1. Choose **MENU**, **Print Test Image**, and **Gray/Align YMC** to print a test card.
2. Examine the test card. The Inner Alignment Arrows should appear at the edge of the leading edge; the Outer Alignment Arrows should not appear on the card, but are shown here for clarity. If your test card does not look like Figure 7-7, go to step 5 to adjust the Transfer TOF.
3. Record the **Transfer TOF** value on the test card last printed.
4. Select MENU, Setup Printer, and Transfer TOF.

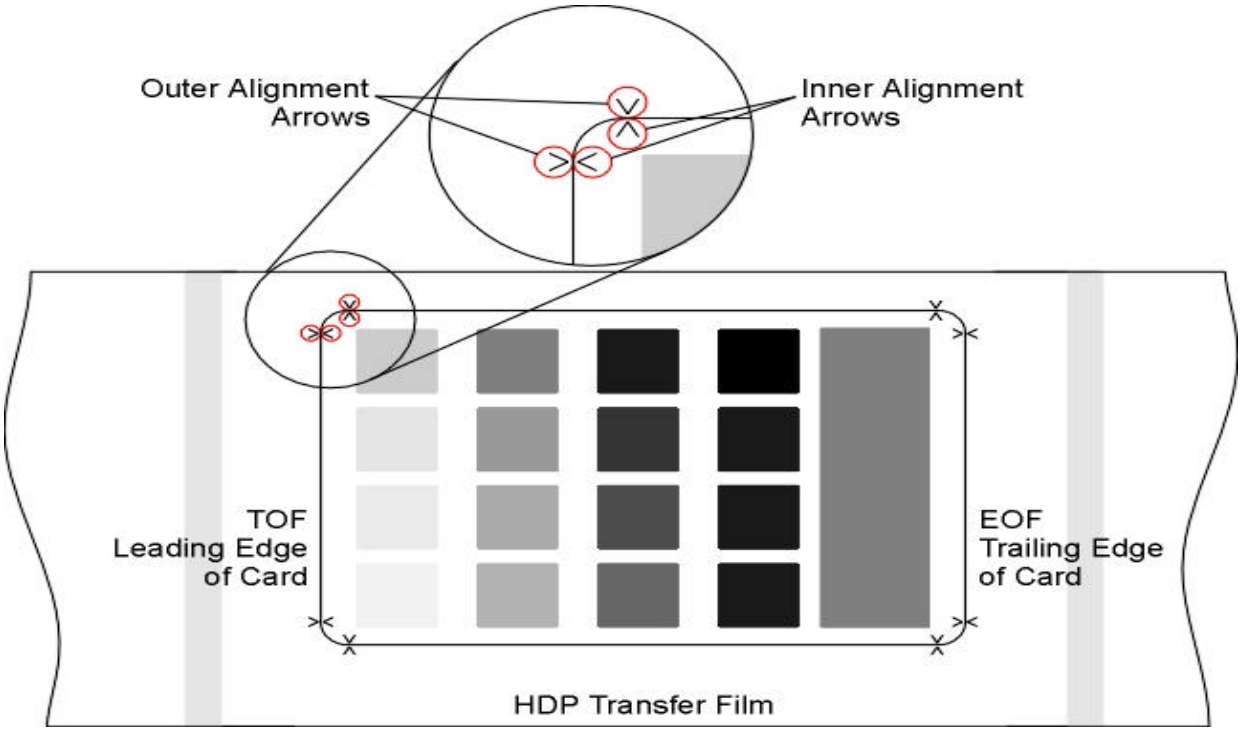


Figure 7-10

5. Measure the distance from the leading edge of the card to the leading edge of the transferred image.
6. Calculate the **Transfer TOF** value for inches or mm.
   Inches: 60 – (Measurement x 300):
   Millimeters: 60 – (Measurement x 11.8).
   Example: Inches: 60 – (.050 x 300) = 45:
7. Adjust the **Transfer TOF** value.
8. Press **SELECT** to save the value.
9. Print a test card as described in step 1.
10. Repeat steps 1 to 9 until the test image is correctly positioned.

7.3.5 Setting the Transfer EOF

This procedure controls the point on the card at which the Transfer Roller lifts, and ceases transfer. Refer to Section 7.3.1 for proper sequence.

1. Choose **MENU**, **Print Test Image**, and **Gray/Align YMC** to print a test card.
2. Examine the test card. The Inner Alignment Arrows should appear at the trailing edge, and the Outer Alignment Arrows should not appear on the card. If your test card does not look Figure 7-7, go to step 5 to adjust the Transfer EOF.
3. Record the **Transfer EOF** value on the test card last printed.
4. Select MENU, Setup Printer, and Transfer EOF.
5. Measure the distance from the trailing edge of the card to the trailing edge of the image transfer.
6. Calculate the **Transfer EOF** value for inches or mm.
   Inches: -90 + (Measurement x 300)
   Millimeters:-90 + (Measurement x 11.8).
   Example: Inches: -90 + (.050 x 300) = -105
7. Adjust the **Transfer EOF** value. Decrease the Transfer EOF value to move the end of the transferred image toward the leading edge of the card; increase the Transfer EOF value to move the end of the transferred image toward the trailing edge of the card. Remember, ±30 pixels will move the transferred image 0.100 in. (3.84mm.)
8. Press **SELECT** to save the value.
9. Print a test card as described in step 1.
10. Repeat steps 1 to 9 until the test image is correctly positioned.
    Refer to Figure 7-10.

NOTE

If the inner alignment arrows are not printing on the card — but are just off the edge — decrease the Print Offset setting by two or three pixels. The entire inner alignment arrow will not show up on the card. More important is that the card shows equal amounts of the arrows.

7.3.6 Adjusting the Film Drive

The Film Drive sets the baseline for the Film Tension and should not be adjusted by the reseller or end user.

7.3.7 Adjusting the Ribbon Tension

This procedure controls the tension of the color ribbon during printing. It will adjust the image placement, but the ***Ribbon Tension*** *may also be adjusted if ribbon wrinkle is appearing on the card.*

NOTE

Be sure the Transfer Tension, Print Offset, Transfer TOF, and Transfer EOF are set properly before adjusting the Ribbon Tension.

1. Choose **MENU**, **Print Test Image**, and **Gray/Align YMC** to print a test card.
2. Examine the test card.
3. Select MENU, Setup Printer, and Ribbon Tension.
4. Record the **Ribbon Tension** value on the test card.
5. Adjust the **Ribbon Tension** value if needed.
6. Press **SELECT** to save the value.
7. Print a test card as described in step 1.
8. Repeat steps 1 to 7 until the test image is correctly positioned or ribbon wrinkle is alleviated. Refer to Figure 7-10.

7.3.8 Adjusting the Ribbon Drive

The Ribbon Drive sets the baseline for the Ribbon Tension and should not be adjusted by the reseller or end user.

7.3.9 Adjusting the Transfer Temperature

1. Choose **MENU**, **Print Test Image**, and **Gray/Align YMC** to print a test card.
2. Examine the test card.
3. Select MENU, Setup Printer, and Transfer Temperature.
4. Record the **Transfer Temperature** value on the test card last printed.
5. Adjust the **Transfer Temperature** value. **Decrease** the **Transfer Temperature** setting if the HDP Film appears to be creasing or wrinkling on the printed card. **Increase** the **Transfer Temperature** setting if the printed image has ragged edges where the HDP Film seems to have peeled off. *To ensure adequate transfer, see Section 3.2.2 (Tape Adhesion Test),*
6. Press **SELECT** to save the value.
7. Print a test card as described in step 1.
8. Repeat steps 1 to 7 until the Film transfers correctly to the card.

7.3.10 Setting the Flattener Temperature

The Flattener Temperature controls the heat of the Flattener. The Flattener will straighten a card after the image has been transferred to it. This may be adjusted from the LCD Menu or from the Image Transfer tab of the driver

7.3.11 Setting the Printhead Resistance

1. Locate the Printhead Setting Number on the bottom of the Printhead. The number reads **R=*XXXX***.
2. Select MENU, Setup Printer, and Printhead Resistance.
3. Input the Printhead Setting Number.

Note

The Printhead Resistance setting in the LCD Setup changes in increments of 50. To select the proper resistance value, choose the setting that is closest to the value on the Printhead.

4. Press **SELECT** to save the value.

7.3.12 Adjusting the Image Darkness

1. Choose **MENU**, **Print Test Image**, and **Gray/Align YMC** to print a test card.
2. Examine the test card.
3. Select MENU, Setup Printer, and Image Darkness.
4. Record the **Image Darkness** value on the test card last printed.
5. Enter a negative value to lighten the printed image; input a positive value to darken the printed image.

NOTE

Be sure to make adjustments in small increments of ± 4, to avoid over-adjusting this setting. For example, the ribbon may jam or break if the setting is too high.

6. Press **SELECT** to save the value.
7. Print a test card as described in step 1.
8. Repeat steps 1 to 7 until the image darkness is correct.

7.3.13 Changing the Encoder Settings

This selection allows the user to modify the encoder settings. These settings would need to be changed when the Print Board is replaced, or if the printer is upgraded to include an encoder.

- Mag: None or Installed.
- Smart: None or Installed.
- Prox: None or Installed.

1. Select MENU, Setup Printer, and Encoder Settings.
2. Change the desired option as needed.
   Example: Adding a Mag Encoder change **MAG** from **None** to **Installed**.
3. Press **SELECT** to save the value.

7.3.14 Setting the Magnetic TOF

This setting is used to position the magnetic data at the correct distance from the leading edge of the card. The Magnetic TOF is the distance from the edge of the card to the Start Sentinel (SS). The Start Sentinel marks the beginning of the encoded data. According to the magnetic recording standard (ISO 7811), the correct Start Sentinel distance is 0.293 inches ± 0.020 inches (7.44 mm ± 0.51 mm) from the leading edge of the card. To measure this distance, the data must be made visible using a magnetic viewer or developer solution. Alternatively, use a magnetic card analyzer to measure the Start Sentinel distance.

1. If using a magnetic viewer or developer solution or spray to make the magnetic data visible, the Start Sentinel can be identified as the first set of magnetic lines (first one-bit) which are visibly closer together than the large number of evenly spaced lines (leading zero-bits) that fill the space to the edge of the card. See Figure 7-11. A magnifying device with a built-in measuring scale makes this easier to measure.
2. Measure the distance from the edge of the card to the Start Sentinel in the data as seen in Figure 7-11.
    - If the Start Sentinel is too far from the leading edge of the card, the Magnetic TOF setting needs to be **reduced** (or made more negative).
    - If the Start Sentinel is too close to the leading edge of the card, the Magnetic TOF setting needs to be **increased** (or made more positive).
3. Select **MENU**, **Setup Printer**, and **Magnetic TOF**.
4. Adjust the setting by the amount determined by the following formula:
   (0.293 inches **-** measured SS distance (inches)) x 300 steps per in.,
   or
   (7.4 mm **-** measured SS distance (millimeter)) x 11.8 steps per mm.

   Example: (0.293 – 0.284) x 300 = 2.7
5. Press **SELECT** to save the value.
6. To test the position of the Start Sentinel, magnetically encode a card and check as described in step 1.
7. Repeat steps 1 to 6 until the Magnetic TOF is correct.

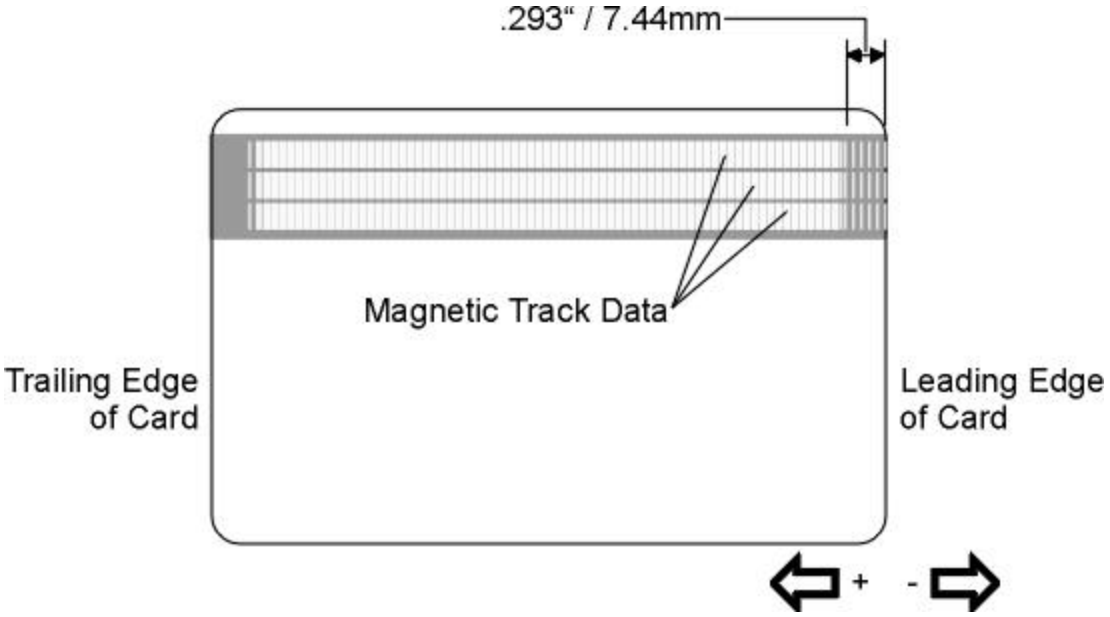


Figure 7-11

7.3.15 Adjusting the Flipper Offset

1. Select MENU, Setup Printer, and Flipper Offset.
2. Change the setting in small increments if the card is not feeding correctly.
   A negative adjustment will lower the side of the Flipper Table closest to the Exit Hopper.
3. Press SELECT to save the value.

7.3 Show Error Count

SHOW ERROR COUNT is a useful tool for troubleshooting the printer. It keeps a log of up to 255 errors and tracks how many times specific errors occur. This helps determine if certain errors are occurring more than others and may pinpoint an area in the printer requiring attention.

Use the scroll buttons to move through the **Exception Log**. Press the RESET button to clear the existing error log and start a new log. Note that the error log will stop logging errors once it has reached its error occurrence limit of 255. See **Interpreting LCD Display Messages** in Section 4 for information about these messages.

ERROR LOG START

Type of Error
Occurrences: X (Number of times).

ERROR LOG END

7.4 Show Card Count

Choose **SHOW CARD COUNT** to view counts for **Card Count (CC), Pass Count (PC),** and **Transfer Count (TC)**.

Card Count is the total number of cards the printer has produced.

Pass Count is the total number of print passes made by the Printhead; a pass is measured each time a single ribbon panel is printed or passes beneath the Printhead.

Transfer Count is the total number of times the printer transfers an image to a card.

7.5 System Upgrade (Firmware Upgrade)

This option is used to upgrade the printer firmware. To upgrade, select **SYSTEM UPGRADE**. The LCD will prompt: **Are you sure you want to continue?** Select **YES** to begin the System Upgrade, select **NO** to return to the **READY** screen.

NOTE

See Appendix A: Firmware Update for detailed instructions for upgrading the system firmware.

Appendix

A

Firmware Updates

The firmware is the internal software, which controls all aspects of the printer's operation. New firmware versions may be released containing enhancements, such as improved reliability, added features, or better print quality. New firmware updates can be downloaded from the Internet and loaded into your printer through its parallel interface port – no chip replacement is needed. Refer to the instructions in this Section to download and install firmware updates.

A.1 The Firmware Updater Application Program

The Firmware Updater application program is the software required to send firmware updates from your computer to your printer. To download and install the Firmware Updater from this site, refer to the following steps:

1. Go to FARGO Electronics Technical Support Web site: http://www.fargo.com/tech_support/
2. Click on the Firmware Updater Program link.
3. Click OK, when prompted to “Save this Program to Disk” and then select a folder in which to save the Updater file.
4. Once the file has been downloaded, navigate to the location where the file was saved. The Firmware Updater program has been compressed for ease of downloading. To decompress the file, double-click on the UPDATER.EXE icon
5. Double-click on the SETUP.EXE file to launch the Firmware Updater Setup Program
6. Follow the on-screen instructions to complete installation. Once installed, the "Firmware Updater" icon will appear in the Start / Programs / FARGO folder.
7. Select the icon seen in Figure A-1 to open the Firmware Updater application program.

Figure A-1

A.2 Downloading Firmware Updates

Refer to the following steps to download firmware updates:

1. Go to FARGO Electronics Technical Support Web site: http://www.fargo.com/tech_support/
2. Click on the firmware file link labeled for your specific printer model.
3. Click OK, when prompted to “Save this Program to Disk” and then select a folder in which to save the Update file.

4. Once the file has been downloaded, navigate to the location where the file was saved. The Firmware Update file has been compressed for ease of downloading. To decompress the file, double-click on the HDP7XXF.EXE icon

A.3 Updating the Printer's Firmware

It is important to note that there are two types of firmware for certain FARGO printer models, the **Main Firmware** and the **LCD Firmware**, each of which has a slightly different update process. If the printer model has two types of firmware available for download from the Web site, be sure to use the appropriate procedure for each. If the printer model only shows a single type of firmware available for download, use only the Main Firmware update procedure.

A.3.1 To update the Main Firmware:

1. From the Firmware Updater program, click the **Select Update File** button.
2. Go to the folder, in which you saved the update file, select it, and click **Open**. The file name, location, and version will appear in the Firmware Updater window as seen is Figure A-2.

Figure A-2

3. Click the **Select Printer** button and select the specific FARGO printer model, then click **OK**.
4. **At this time, the printer must be prepared to receive the firmware update file**. To do this, make sure the printer is powered ON and in its READY mode. Then, press the printer's **MENU** button.
5. Use the scroll buttons to scroll down to the **System Upgrade** option, and press **SELECT**. The printer will ask if you would like to continue. Press **YES**.
6. The printer will restart into the System Upgrade mode. Verify that the interface cable is securely connected to both the printer and your computer, and press the **START** button. The printer will wait up to 60 seconds to receive the firmware update before timing out. The clock will be indicated on the LCD display.
7. From the Firmware Updater software, click the **Send Update** button. The Sending Update To Printer dialog box will appear as in Figure A-3.

Figure A-3

The Firmware update will now take a few minutes. Check the printer's LCD for the status. When the update is complete, the LCD will indicate if the update was successful. If "UPGRADE SUCCESSFUL" is displayed, click **Exit** on the "Sending Update to Printer" dialog screen. Press the printer's **EXIT** button. When prompted, turn the printer power OFF for a few seconds and then back ON to complete the update process. As the printer restarts, you will see the new firmware version appear on the LCD. If the upgrade was not successful, the LCD will display "**UPGRADE FAILED**" or "**UPGRADE FIRMWARE NOW**" on boot up. If you receive this message, try updating the firmware again.

A.3.2 To update the LCD Firmware:

1. Make sure the printer is powered ON, connected to your PC, and in its READY mode.
2. From the Firmware Updater program, click on the **Select Update File** button.
3. Go to the folder, in which you saved the update file, select it, and click **Open**. The file name, location, and version will appear in the Firmware Updater window as seen in Figure A-4.

Figure A-4

4. Click on the **Select Printer** button and select your specific FARGO printer model, then click **OK**.
5. Click on the **Send Update** button. The Sending Update To Printer dialog box will appear as seen in Figure A-5.

Figure A-5

The Firmware update will now take a few minutes. Check the printer's LCD for the status. When the update is complete, the LCD will indicate if the update was successful. If "UPGRADE SUCCESSFUL" is displayed, click **Exit** on the "Sending Update to Printer" dialog screen. Press the printer's **EXIT** button. When prompted, turn the printer power OFF for a few seconds and then back ON to complete the update process. As the printer restarts, you will see the new firmware version appear on the LCD. If the upgrade was not successful, the LCD will display "**UPGRADE FAILED**" or "**UPGRADE FIRMWARE NOW**" on boot up. If you receive this message, try updating the firmware again.