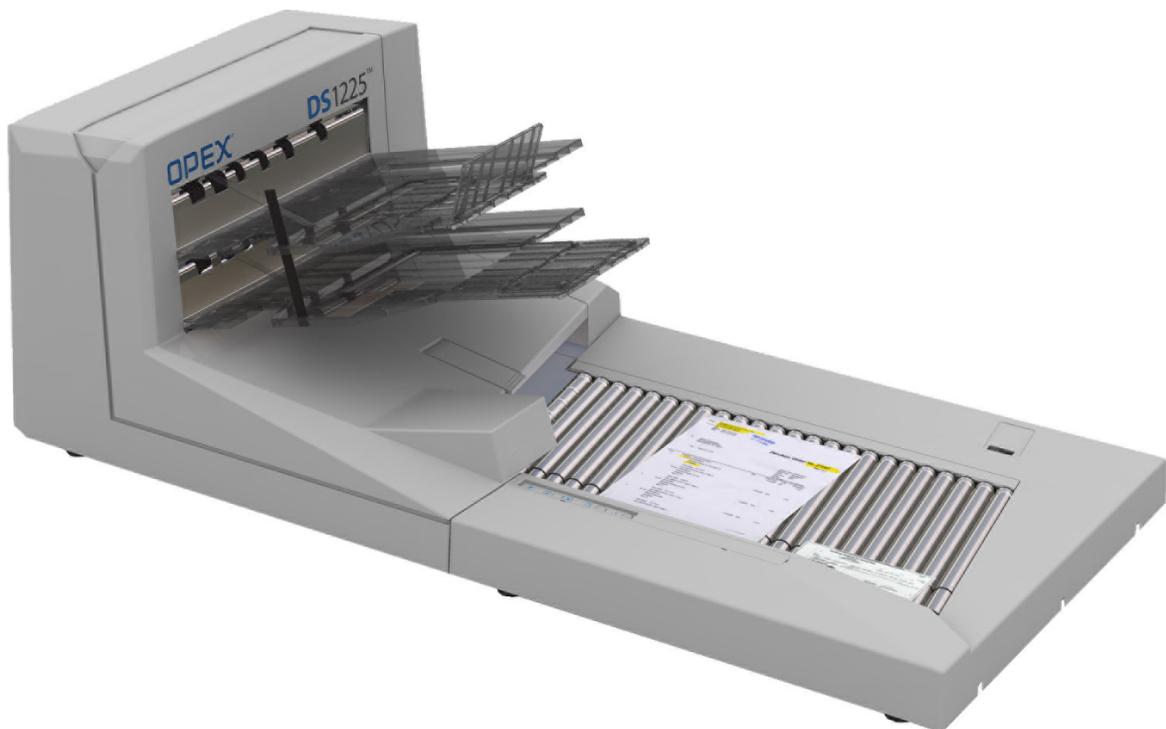


DS1225™

USER MANUAL



If you find errors, inaccuracies, or any other issues or concerns with this document, please contact the OPEX Technical Writers via email at: GroupTechwriters@opex.com

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To request permission, contact:

OPEX® Corporation
ATTN: Legal Department
305 Commerce Dr.
Moorestown, NJ 08057-4234



From the President of OPEX Corporation

Efficiency and transaction integrity are critical to payment processors. The OPEX DS1225 is engineered as a single station solution that satisfies both of these key issues. Its broad capabilities enable our clients to minimize document prep thereby reducing labor and improving throughput and accuracy.

Sincerely,

OPEX CORPORATION

Mark Stevens
President/CEO

Table of Contents

Chapter 1 Introduction

Overview	1-1
DS1225 variations	1-2
DS1225 specifications	1-2
Safety Precautions	1-3
Ergonomics	1-3
Interlock system	1-3
Installation	1-4
What comes with your DS1225?	1-4
Unpacking	1-5
Software Installation	1-7
Controls and Components	1-8
Control panel	1-10
Connections	1-12
Integrated Workstation (Optional)	1-13
Computer requirements	1-13

Chapter 2 Software

Overview	2-1
DS1225 Capture	2-3
Capture program settings	2-4
DS1225 TWAIN Datasource UI	2-8
Scanner settings	2-9
Dynamic Scan	2-26
Saving your settings	2-30

Chapter 3 Scanning

Basic Scanning Tutorial	3-1
Removing documents from an envelope	3-2
Skew	3-2
Multifeed Detection	3-3
MICR	3-3
Scanning envelopes (or multiple items)	3-3
Dropping documents from envelopes	3-4
Preparing the Sort trays	3-5
Clearing a Jam	3-6

Chapter 4 Maintenance

Replacing consumables	4-1
Removing/Replacing the Printer Cartridge	4-2
Adjusting the Printer Carriage Position	4-4
Removing/Replacing the MICR Wiper	4-5
Removing/Replacing the Feeder O-Ring	4-7
Cleaning	4-9

Chapter 5 Troubleshooting

Standard Diagnostics	5-1
Version	5-2
QC Test	5-3
Calibration	5-12
Licensing	5-17
Misc.	5-21
Printers	5-22
Full Diagnostics Tool	5-23
Gates	5-24
Motors	5-25
Sensors	5-26
Lights	5-27
Printers	5-28
MICR	5-29
Imagers	5-30
Loopback	5-31
Burn In	5-32
Scanner Jams	5-33
Troubleshooting	5-37
No Power (Unit will not turn on)	5-37
Control Panel (Does not turn on)	5-37
Conveyor and Transport Motors (Does not turn on)	5-37
DS1225 scans one piece and stops	5-38
Scanner does not communicate with Software Application	5-38
Printer does not print	5-38

Appendix A
Audit ID Reference

Overview	A-1
Example 1	A-2
Example 2	A-3
Example 3	A-4
Example 4	A-5

Glossary

Index

Chapter
1

Introduction



Overview..... 1-1

 DS1225 variations 1-2

 DS1225 specifications 1-2

Safety Precautions 1-3

 Ergonomics 1-3

 Interlock system 1-3

Installation 1-4

 What comes with your DS1225? 1-4

 Unpacking 1-5

 Software Installation 1-7

Controls and Components 1-8

 Control panel 1-10

 Connections 1-12

 Integrated Workstation (Optional) 1-13

 Computer requirements..... 1-13

Overview

Thank you for purchasing the OPEX DS1225™, a mid-volume production scanner. With the DS1225, intermixed, different-sized documents can be scanned together without adjustment to the scanner feed. In a single step, the DS1225 can scan, capture, read MICR, print an audit ID, and sort transactions containing checks and other documents.

The DS1225 is a single-operator workstation that greatly reduces document preparation. With a single operator in contact with documents, opportunities to misplace or damage documents are reduced and the risk of confidential information being compromised is minimized. Moreover, the scanner's drop feeder reduces jams, eliminates the need to jog, and proficiently processes even the most damaged and prep-intensive documents.

Standard features include:

- Ultrasonic multifeed detection
- OpAssist™ input sensor
- TWAIN standard interface
- Two sort trays
- Bottom audit ID printer with ink level indicator (standard)
- Top audit ID printer with ink level indicator (optional)
- Optical MICR read (magnetic MICR optional)

Other optional features include:

- CertainScan™ Image Capture Application, which includes:
 - External PC w/XP Pro
 - 17" touch screen monitor
 - Keyboard & mouse
 - OPEX standard barcode package
 - OPEX OCR font set
 - Electronic audit trail
 - Mark detection software
 - All related manuals and documentation
- 1-D & 2-D barcode recognition
- Reference ID software feature
- Image Edge software binarizer
- Full Diagnostics software
- Integrated workstation/table

DS1225 variations

This user manual covers the following machines:

- DS1225m - (mixed mail) does not include MICR
- DS1225p - (payments) includes MICR
- DS1225pPack - (all inclusive payments) includes MICR, top printer, integrated workstation and CertainScan

Throughout this document, the machine will be referred to as the “DS1225.” If information refers to a specific machine, it will be identified by name.

DS1225 specifications

Document Feeding	Continuous drop feed
Document Width	2.0" - 12"
Document Length	3.5" up to 25" in length
Document Thickness	Up to 1/16"
Scanning Speed (300 dpi, Letter, Color, Duplex)	110 ppm / 220 ipm (Throughput speeds may vary depending on your choice of driver, application software, operating system and PC)
Imprinting	Bottom post-scan (included) with ink level indicator, Top post-scan (optional)
Character Reading	Onboard magnetic and optical MICR read
Document Separation	2 output sort trays
Interface / Connectivity	Hi-Speed USB 2.0 (cable included)
Daily Duty Cycle	110ppm
Dimensions (H x W x D)	23" x 49" x 23" (58.42cm x 124.46cm x 58.42cm)
Weight	52.163 kilograms/115 lbs
Operator/Service clearance	3' all around
Bundled Software	<ul style="list-style-type: none"> • TWAIN Drivers • OPEX Diagnostic Standard • OPEX Standard Capture Application
Additional Features	<ul style="list-style-type: none"> • Ultrasonic multifeed detection • OpAssist™ input sensor • Ink level indicator
Optional Features	<ul style="list-style-type: none"> • Top post-scan printer • Integrated workstation with organizer bins • OPEX CertainScan™ Pro • OPEX Diagnostic Pro
Sound level	Below 72 dB
AC requirements	100 - 240 VAC, 1.75 - 0.75 A, 47 - 63 Hz
Temperature requirements	Non-Operating: 0°F to 110°F Operating: 10°F to 100°F
Relative Humidity	Non-Operating: 0% to 85% Operating: 14% to 85% not to exceed 90%

Safety Precautions

Follow these safety guidelines to avoid injury when operating the DS1225. Failure to follow these precautions may result in severe personal injury or damage to the machine.

To reduce possible risks, we strongly urge you to follow these suggestions:

- Be careful when working with AC power.
- Do not set liquids (such as drinks) on the scanner that could spill into the machine.
- Keep loose objects away from any exposed, moving parts of the machine.
- Do not lift the feeder arm while the machine is running.
- Do not attempt to clean the machine while it is running.
- The MFD transmitter can emit frequencies that affect the hearing of some animals. It is recommended that you set up the DS1225 in an area away from any pets.
- Do not use flammable, high pressure, “canned air” to clean paper debris and dust from the machine.
- Do not move the machine while the power is on.

Ergonomics

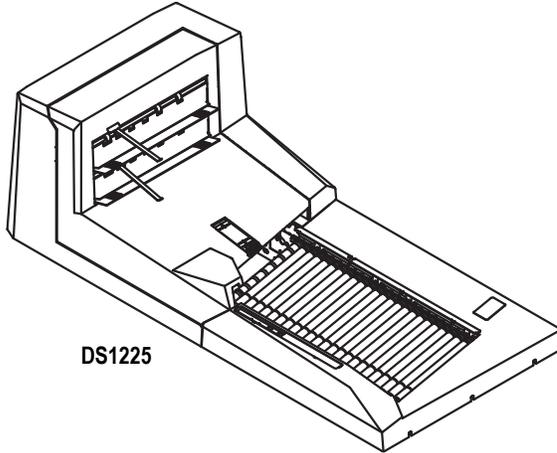
As in any occupation which requires you to perform the same motion repeatedly during the course of your day, it is important to consider how you perform your task. Make any adjustments needed to your chair to obtain proper posture when using the machine. Your posture, how you handle materials, the workplace layout, and observing all safety precautions may help in preventing carpal tunnel syndrome or other symptoms. Operation by individuals with limited reach capability or who cannot follow the suggestions listed should be avoided or limited in duration.

Interlock system

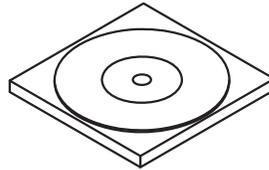
The DS1225 Interlock system automatically stops the machine when the clamshell is opened. The conveyor and all of the other moving parts of the machine will stop, preventing possible injury to the operator.

Installation

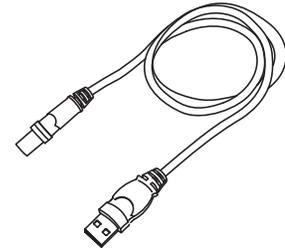
What comes with your DS1225?



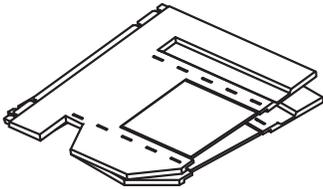
DS1225



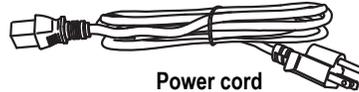
Install CD with TWAIN driver



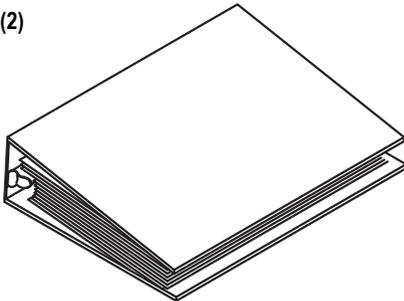
Hi-speed USB 2.0 cable



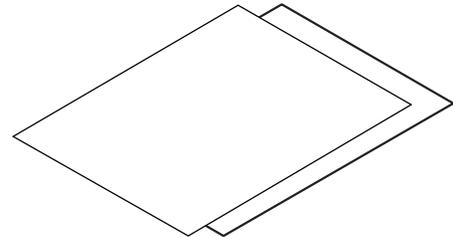
Sorting trays (2)



Power cord



User Manual (this document)



Calibration Documents &
Basic Diagnostics tools

If any of these above items are missing, contact OPEX Technical Support at: 1-800-673-9288.

Unpacking

The DS1225 weighs approximately 115 lbs (52.163 kg). Two people are required to unpack, lift and/or move the scanner. When moving the DS1225, hold the scanner on opposite sides as shown.

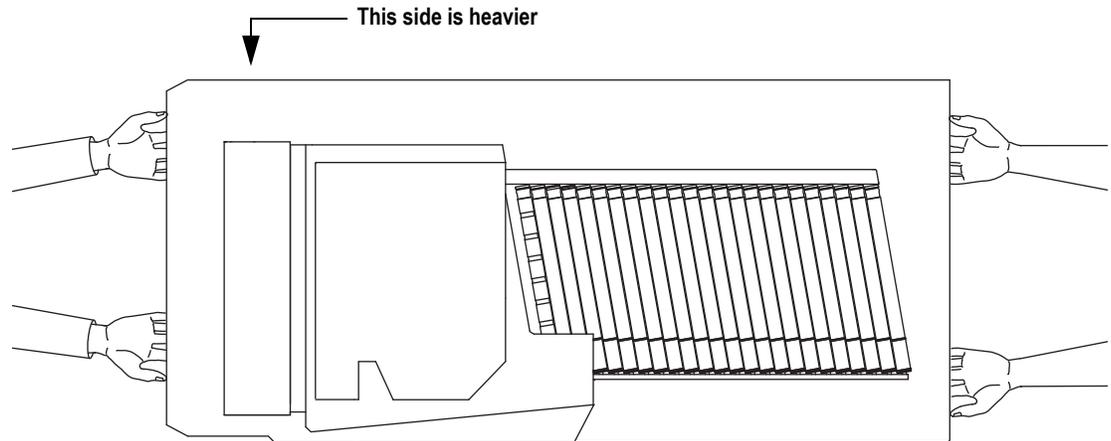


FIGURE 1: Holding the scanner (bird's eye view)

To unpack the DS1225

NOTE: We highly recommend that you save the shipping materials, should you ever need to repack your product. If you decide *not* to keep the shipping materials, and in the future need to repack the unit, repacking kits are available for purchase by contacting OPEX Technical Support at 1-800-673-9288.

- 1 Set the shipping carton on the floor or on a sturdy surface to begin unpacking it.

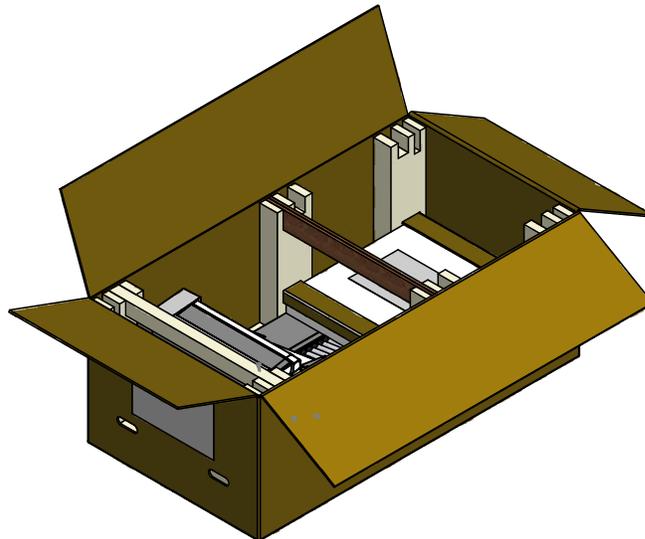


FIGURE 2: Opening the shipping carton

- 2 Open the lid of the box and inspect the contents for any visible damage.
- 3 Remove the top supports from the machine and set them aside.

1 Introduction

- 4 Lift the accessory box out off the carton, and set it aside.
- 5 Remove the plastic sheet and set it aside.
- 6 With two people lifting (see Figure 1), remove the DS1225 from the carton and set the DS1225 in the location where you want to use it. The DS1225 should be set up on a clean, level flat surface. Make sure it is secure and level, so you do not run the risk of the scanner tipping or falling, causing damage to the machine or yourself.
- 7 Remove the contents from the accessory box. The accessory box that includes the user manual, calibration & diagnostics documents, install CD with TWAIN driver, power cord, USB cable, and sort trays (2).
- 8 Align the edge of a sort tray with the lower slot on the DS1225 (see Figure 3).



FIGURE 3: Sort tray assembly

- 9 Press the tray firmly into the lower slot.
- 10 Align the edge of the second tray into the upper slot and press the tray firmly into the upper slot.
- 11 If desired, slide the fingers into the holes in the front edge of the top tray as shown in Figure 4. These help contain documents on the tray.

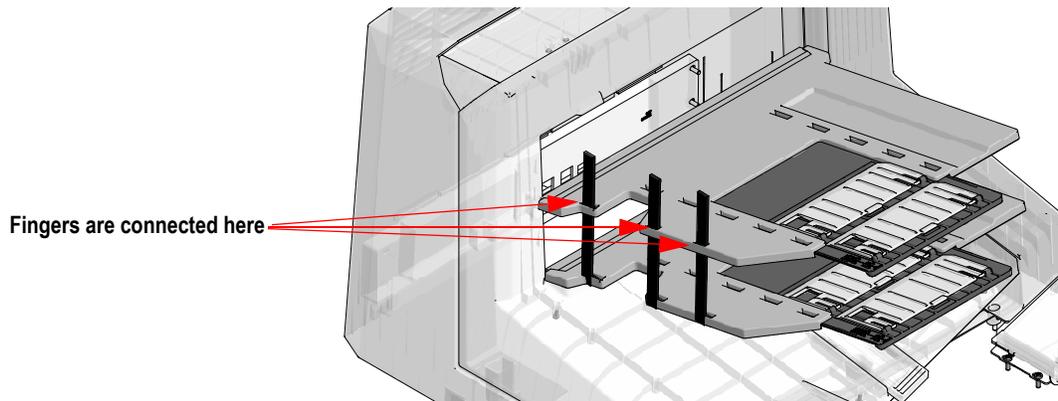


FIGURE 4: Tray finger location

Software Installation

This section describes how to install the software so you can use the scanner with your computer.

- 1 Connect the scanner to the computer using the provided USB cable.

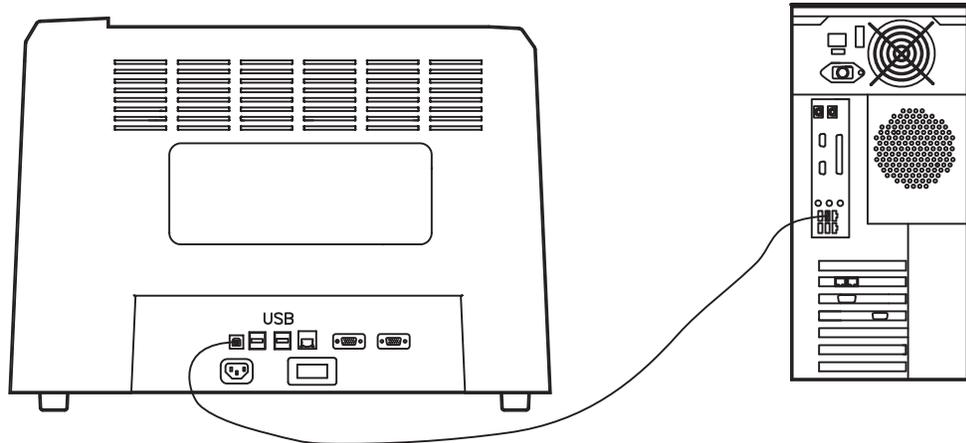
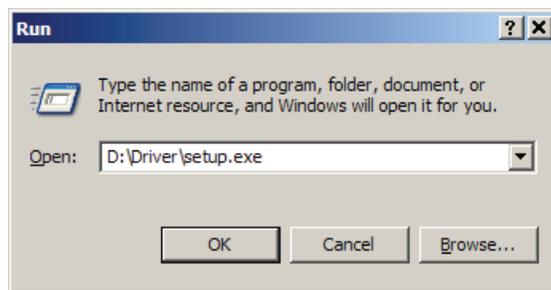


FIGURE 5: Connecting the DS1225 to the computer

- 2 Power up the scanner first, then power up the computer. If using Windows XP, the “Found New Hardware Wizard” dialog box appears.
- 3 Insert the provided Installation CD into the CD/DVD drive on the computer. Once recognized, the autorun wizard should begin. If not:
 - a. Click **Start** and select **Run**.
 - b. In the **Open** field, enter: **D:\Driver\setup.exe**
 - c. Click **OK**.



- 4 Follow the on-screen instructions for installing the application.
- 5 Once installed, the software will create two icons on the desktop. One for opening the DS1225 Capture program, and the other for accessing the machine’s diagnostic software.



FIGURE 6: DS1225 desktop icons

Controls and Components

Data ports/connections (not shown)
See page 1-12 for more detail

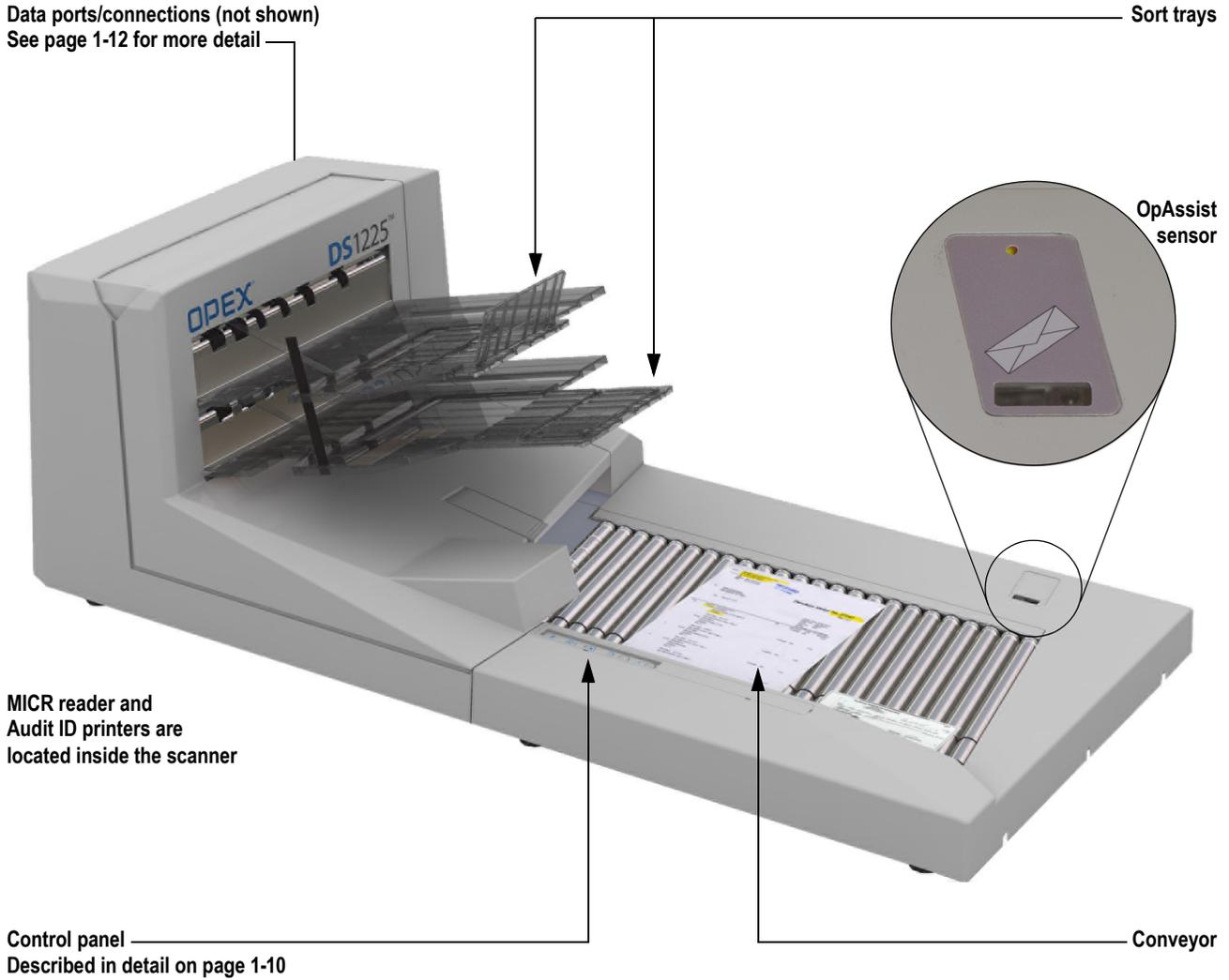


FIGURE 7: Main components

Conveyor

The DS1225 allows for quick and easy feeding of mixed size documents - from business cards to documents as large as 12" x 25". Place documents onto the drop feeder for scanning into the DS1225. The DS1225's unique drop feed technology can handle the widest range of documents without fear of double feeds or document damage. Simply drop documents onto the conveyor, and it automatically aligns and flattens them regardless of variable sizes. Checks, invoices, correspondence, envelopes, and other documents can all be scanned intermixed with little or no preparation.

Sort trays

Documents are scanned and sorted into one of two selectable output trays. Pieces with magnetic MICR (such as checks) can be sorted to a separate tray for easy secondary processing.

Ultrasonic multifeed detection

The DS1225's ultrasonic multifeed detection protects against double-feeds by transmitting a sound wave from one side of the paper path and receiving it on the other. Overlapped documents are identified by changes in the sound waves and the system stops the conveyor when a double feed is detected.

OpAssist

The OpAssist feature is used to bypass the multifeed protection function. When the user waves an item above the sensor the green LED lights and an audible beep occurs, signifying that the multifeed protection is now deactivated. This is useful for envelope scanning.

CIS

The DS1225 uses two contact image sensors (CIS) to scan pieces. Each CIS scans a side of the document and can save images in either color or grayscale. The CIS is in near direct contact with the object to be scanned in order to scan to the proper focus. The CIS can scan up to 12" wide documents in either portrait or landscape mode.

MICR reader

The DS1225p can read MICR from checks optically and/or magnetically (magnetic MICR Reader is an option). The results are then compared to ensure superior accuracy.

Audit ID printers

The audit ID printers can be configured to automatically imprint sequence numbers, batch numbers, or other static information to the front and back of checks and documents. This provides quality auditing, compliance and research benefits to your process. The DS1225 comes with a bottom printer (standard); adding a top printer is optional.

Control panel

The DS1225 control panel interface provides the user with several system-level functions without the use of a computer.

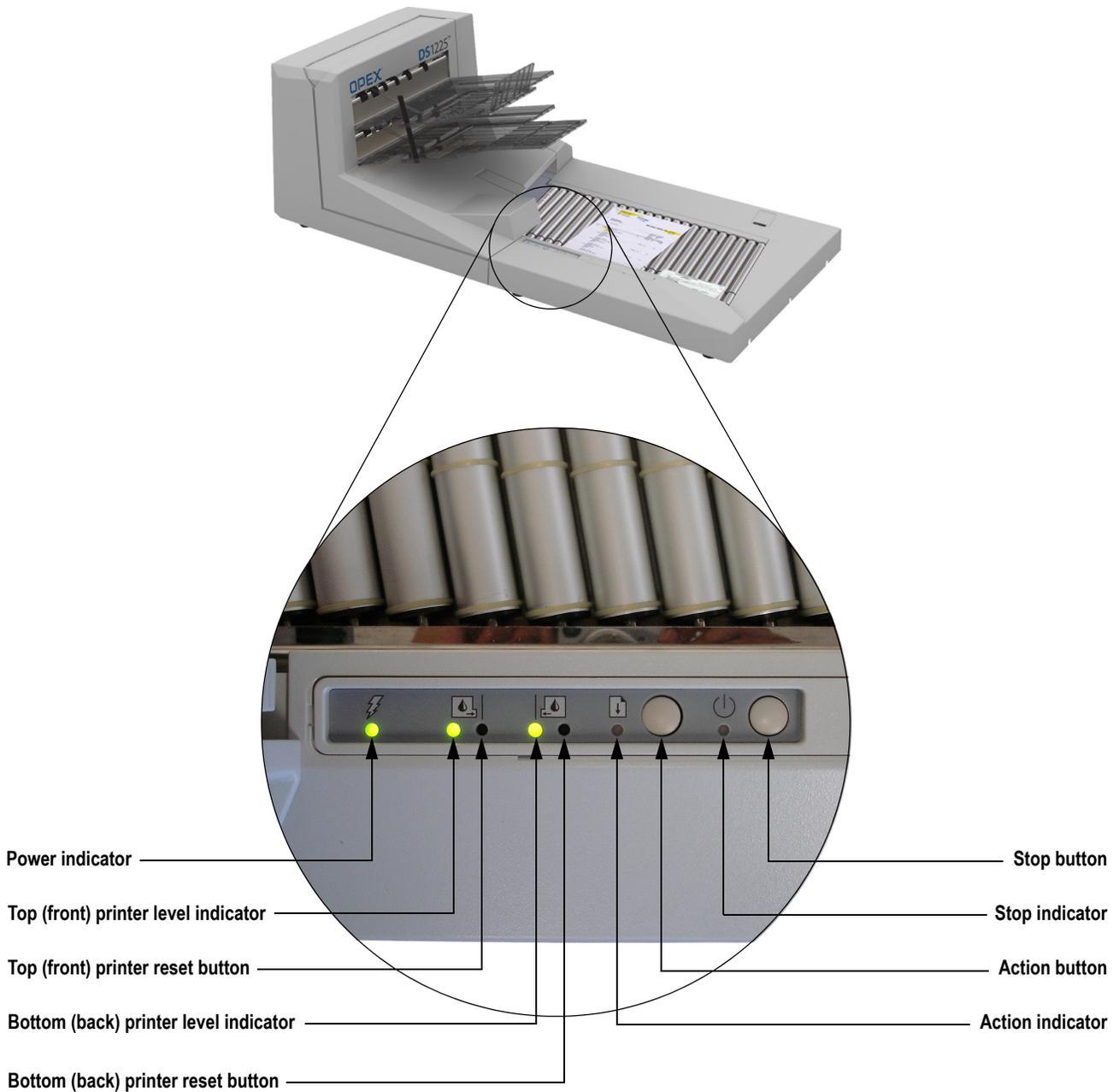


FIGURE 8: Control panel

Control panel buttons and indicators

Power indicator	<p>Tricolor LED used to indicate system power status:</p> <ul style="list-style-type: none"> • Red: when the DS1225 power switch is turned on, the indicator appears red, indicating power is present. • Yellow: indicates the system is going through its initialization process. • Green: indicates the system has completed its initialization process.
Top (front) printer level indicator	<p>Displays cartridge ink level status for the top (front) printer:</p> <ul style="list-style-type: none"> • Green - cartridge is full • Yellow - cartridge ink level is low • Red - cartridge is empty <p>NOTE: This function will be disabled if the optional front printer is not installed.</p>
Top (front) printer reset button	<p>Press this (recessed) button to reset the top printer drop count to zero.</p> <p>NOTE: This function will be disabled if the optional front printer is not installed.</p>
Bottom (back) printer level indicator	<p>Displays cartridge ink level status for the bottom (back) printer:</p> <ul style="list-style-type: none"> • Green - cartridge is full • Yellow - cartridge ink level is low • Red - cartridge is empty
Bottom (back) printer reset button	<p>Press this (recessed) button to reset the bottom printer drop count to zero.</p>
Action button	<p>Press the Action button to perform a defined task.</p>
Action indicator	<p>Indicates when the Action button has been activated.</p>
Stop button	<p>Stop the conveyor.</p>
Stop indicator	<p>Illuminates when the Stop button has been pressed.</p>

Connections

The DS1225 has several connectors and ports for connecting the scanner to PCs and other peripherals.

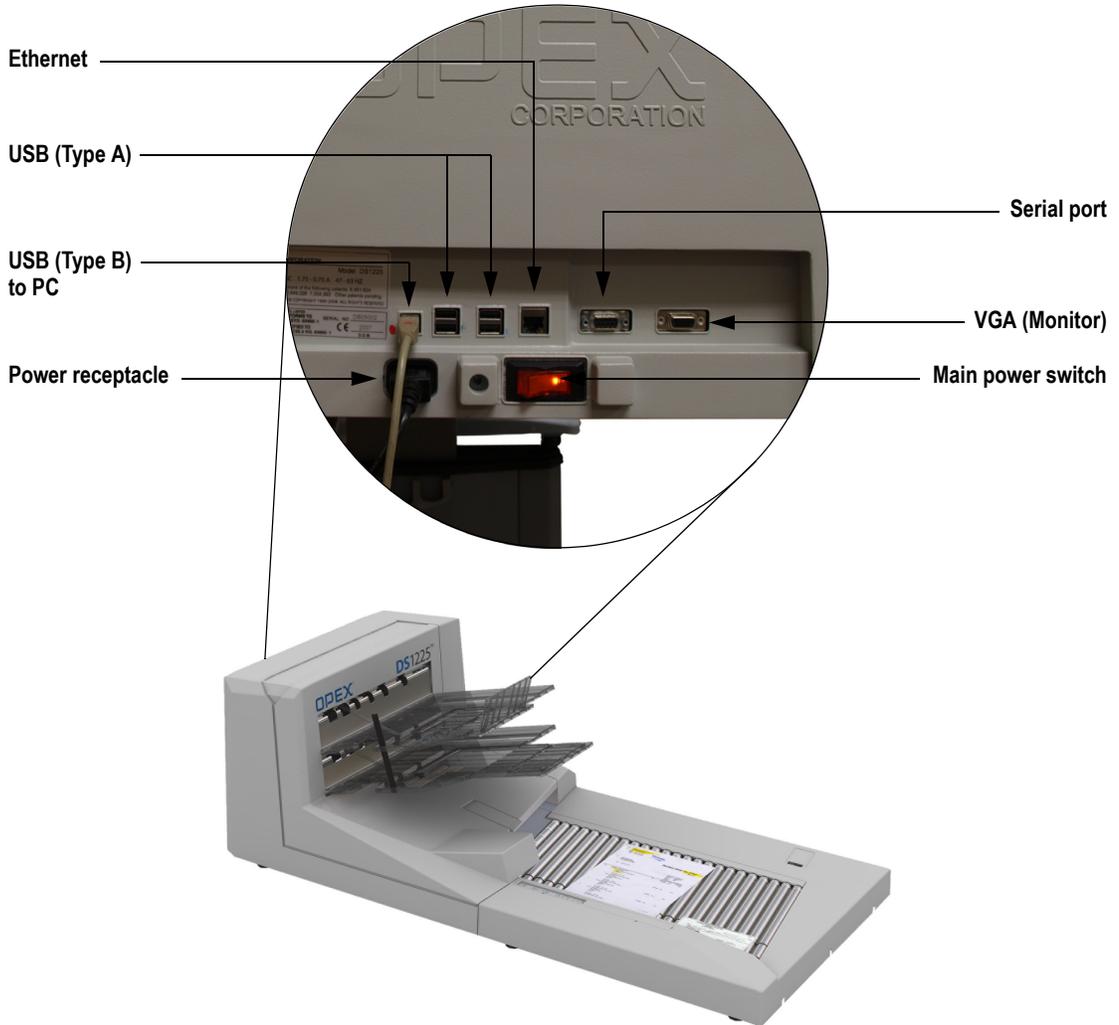


FIGURE 9: DS1225 back panel connections

Ethernet	The ethernet port is for OPEX technical support use only.
USB	The DS1225 has a single, USB Type B connector and four USB Type A connectors. Use the Type B USB connector to connect to your computer using the provided cable. The Type A USB connectors are for OPEX technical support use only.
Serial Port	9-pin connector used for transferring data one bit at a time. This connector should only be used for OPEX technical support.
VGA	A standard monitor connection is provided for OPEX technical support and engineering test purposes.
Power receptacle	Insert the power cord here and connect the other end to an AC power outlet.
Main power switch	Turns the DS1225 on and off. The switch illuminates when power is on.

Integrated Workstation (Optional)



There is an optional, integrated workstation designed specifically for the DS1225. The optional table assembly is designed to convert the DS1225 into an integrated workstation. The height of the workstation can be adjusted from a minimum of 25 inches to a maximum of 36 inches via a hand crank. Locking front casters keep the unit stationary.

For more information, contact your OPEX Sales Engineer or authorized reseller.

Computer requirements

PC supplied with CertainScan

The PC supplied with CertainScan (OPEX's capture application) will have the following minimum specs: Windows XP SP3, Intel AM2 2.6 GHz processor with 2G RAM, USB 2.0, hard disk 160GB, DVD drive, Video NVIDIA GeForce 8400 GS.

Customer-supplied PC

The minimum system requirements for a customer-supplied PC to work with the DS1225 are:

Windows XP SP2, Pentium IV 3.0 GHz processor with 1G RAM, CD or DVD drive, USB 2.0, minimum drive space for TWAIN DS and diagnostics is less than 10MB. Microsoft.NET is required (which is part of SP2).

Software

Chapter
2

Overview..... 2-1

DS1225 Capture..... 2-3

 Capture program settings..... 2-4

DS1225 TWAIN Datasource UI..... 2-8

 Scanner settings..... 2-9

 Dynamic Scan 2-26

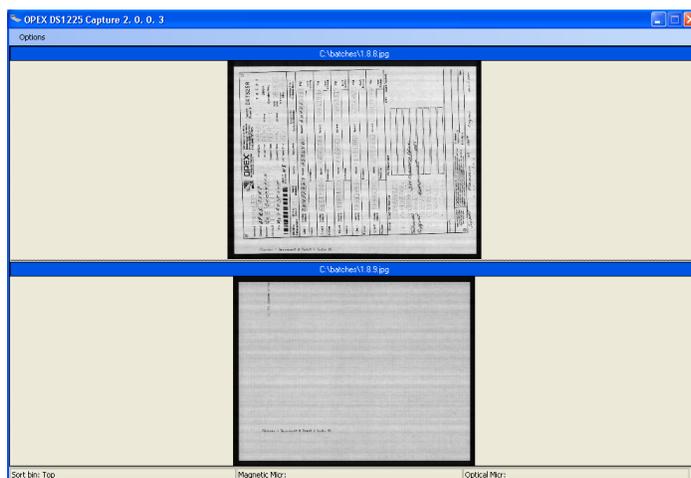
 Saving your settings..... 2-30

Overview

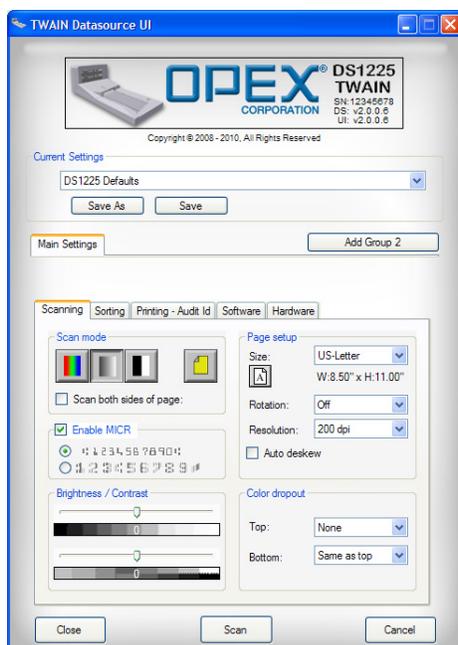
Depending on your setup, you will be using the bundled OPEX software to capture images, our optional CertainScan software, or another capture application from another vendor. This chapter describes the OPEX software that is shipped with every DS1225 scanner.

For clarification, there are 3 pieces of software bundled with the scanner:

DS1225 Capture The Capture application processes and displays images provided by the DS1225 via the TWAIN interface. The Capture application, which also determines how image files will be named and stored, is described on page 2-3.

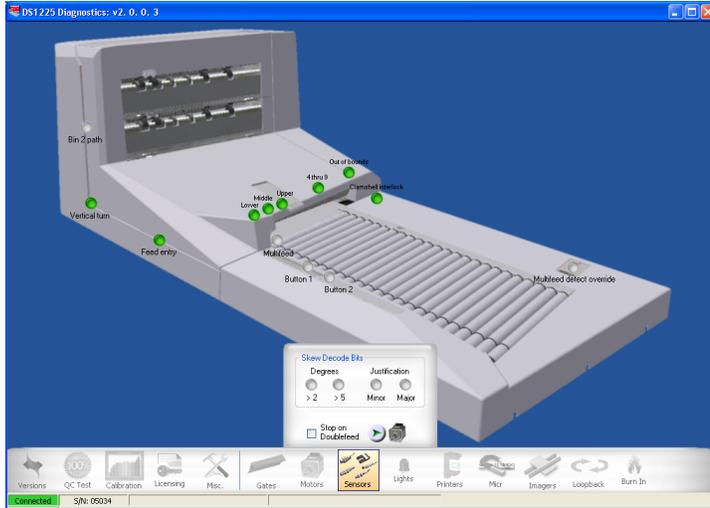


DS1225 TWAIN Datasource UI Use the TWAIN Datasource User Interface (TWAIN UI) to configure the scanner. The TWAIN UI provides settings for image quality, sorting pieces, information to print on pieces, etc. The TWAIN UI is described on page 2-8.



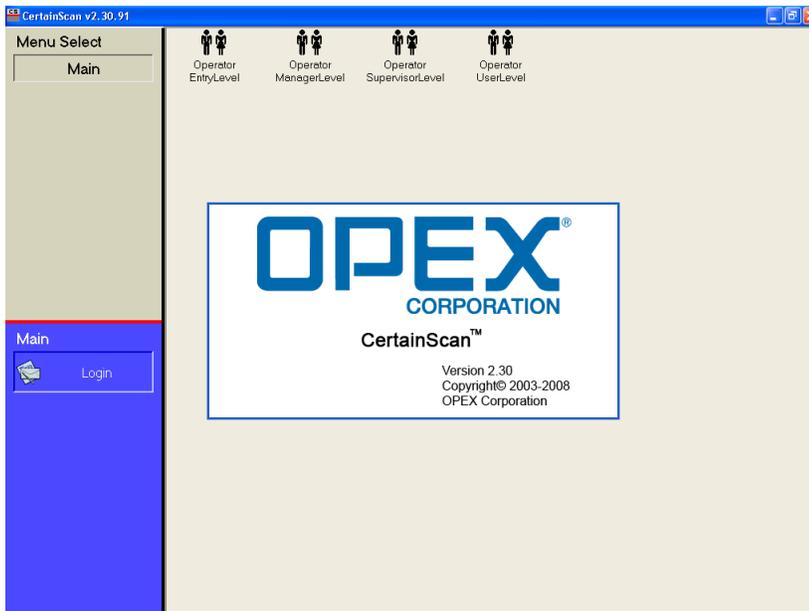
DS1225 Diagnostics The Diagnostic allows you to troubleshoot basic problems with the machine. The “standard” diagnostics are installed on each DS1225; the “full” version is a purchaseable option that adds enhanced functionality.

The Diagnostic software is discussed in detail in Chapter 5.



CertainScan

The OPEX CertainScan software is a purchaseable image capture/processing solution. If you are using CertainScan, refer to the *DS1225 CertainScan Manual* for information on how to set up and use the software.



DS1225 Capture

The DS1225 Capture application displays and saves images provided by the scanner via the TWAIN interface. The Capture program has only a few settings, such as where and how to save images provided by the scanner.

Double-click on the DS1225 Capture desktop icon to start the program.



DS1225
Capture

NOTE: Most of the settings you will need to set are included in the TWAIN User Interface, which is described on page 2-8. The TWAIN UI settings establish how images are saved, what information will be printed on pieces, and how they will be sorted.

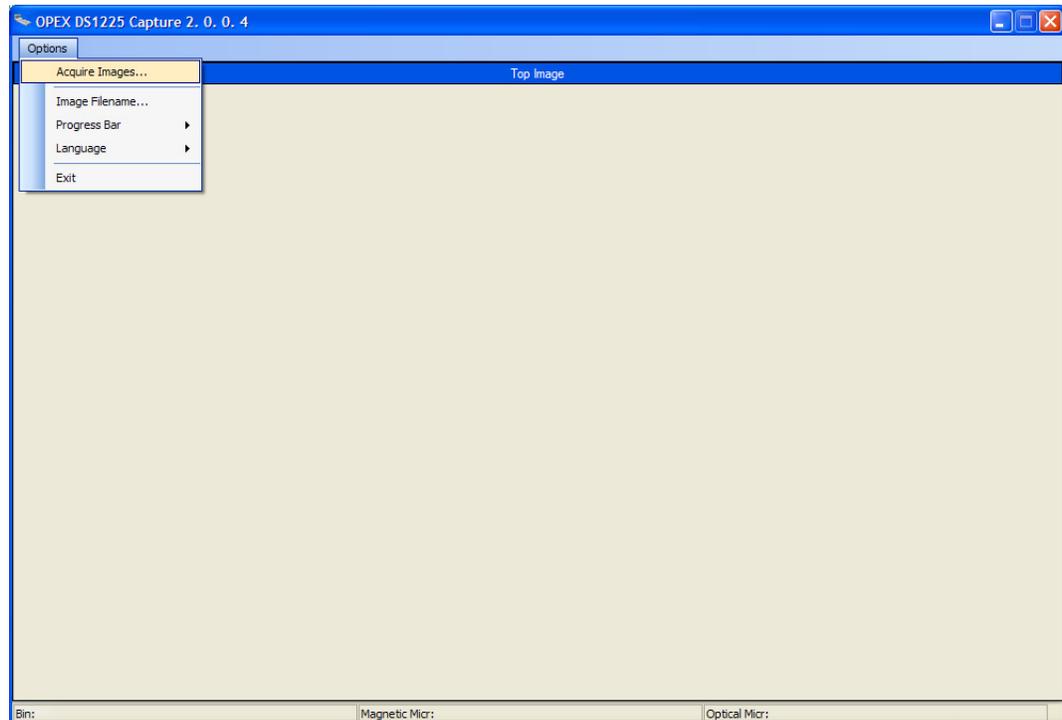


FIGURE 10: Capture application main screen

Capture program settings

Click the **Options** button on the Capture program's menu bar to access its settings. The settings are described here.

Acquiring images

Select **Acquire Images...** to access the TWAIN UI. You can then use the Capture application and TWAIN UI to scan pieces.

- 1 Click **Options > Acquire Images...** to access the TWAIN UI.
- 2 Select one of the saved jobs in the **Current Settings** field, and/or make the necessary changes to the TWAIN UI settings.
- 3 Click **Scan** to begin processing documents. The DS1225 will start, and you can begin scanning as described in Chapter 3.

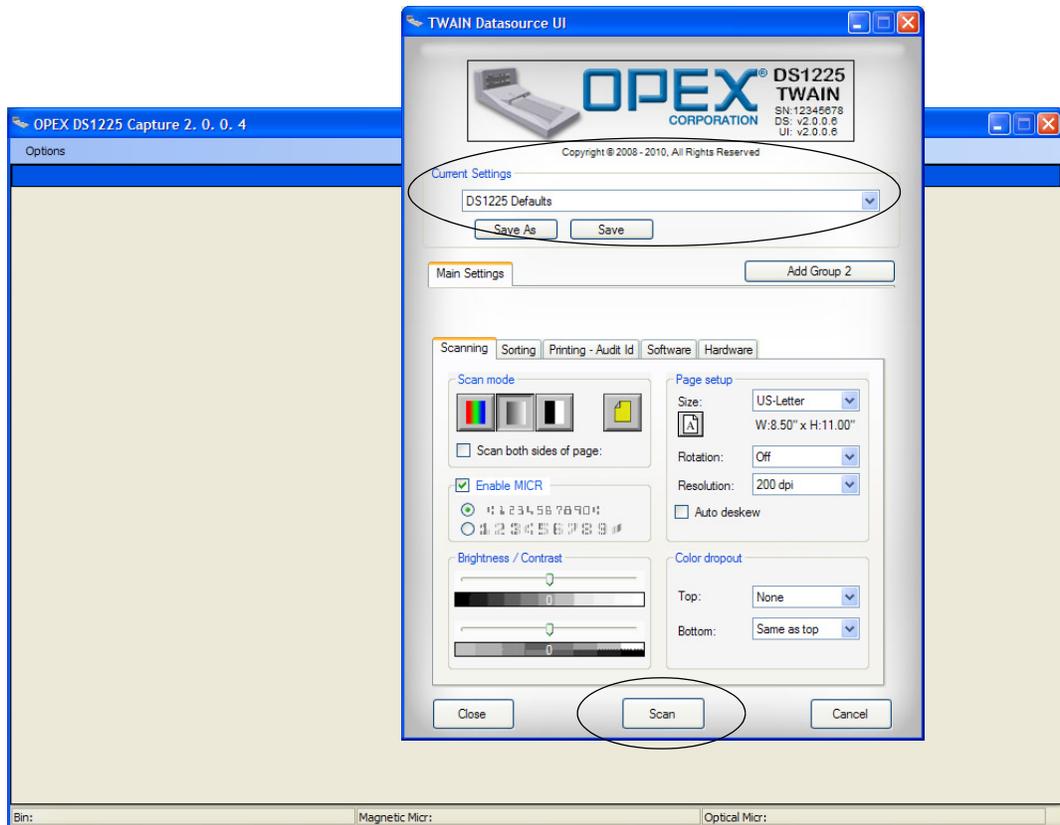


FIGURE 11: Capture application and TWAIN UI

File naming

Select **Image Filename...** from the Capture menu to access the File Naming settings. The File Naming settings determine where images will be saved, how they will be named, and in what format images will be saved in.

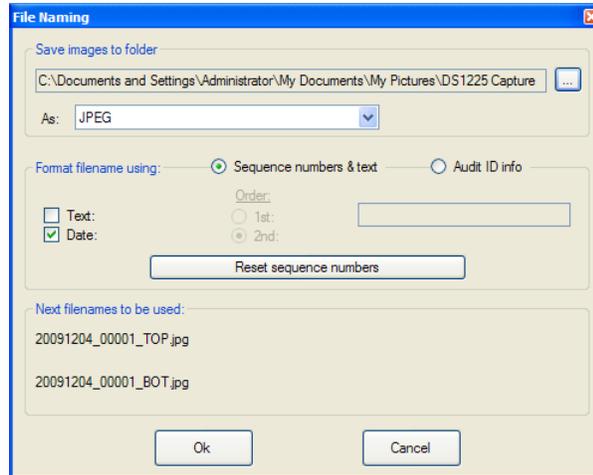
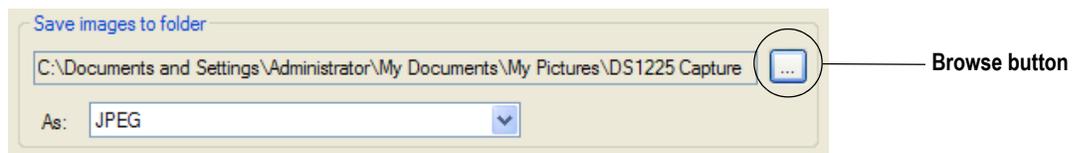


FIGURE 12: File naming settings

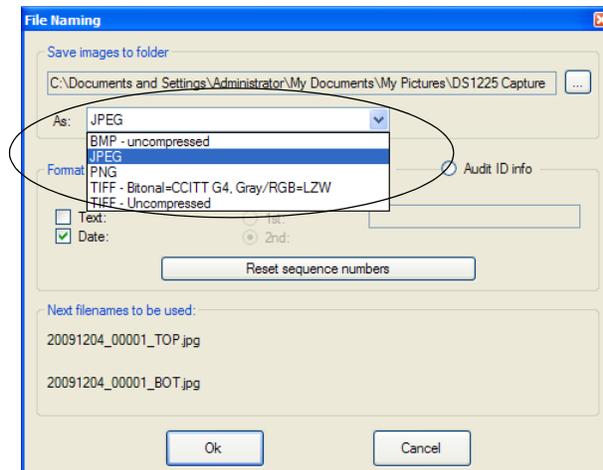
Save images to folder

Select a directory to store images and which format to save them in.

- 1 Click on the Browse (...) button, and navigate to the folder you want to save image files in.



- 2 Select one of the available image formats from the **As:** dropdown list. The default format is **JPEG**.



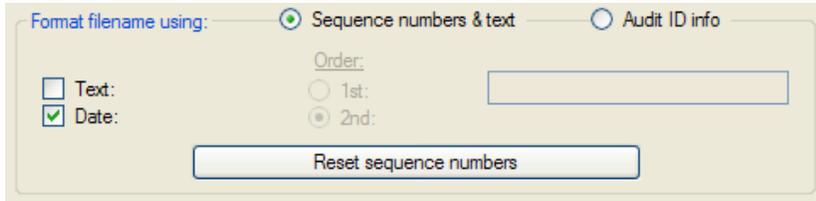
Format filenames

Designate a format for how image files will be named. You can create a naming format with text and/or date information here, or use the Audit ID information established by the TWAIN UI.

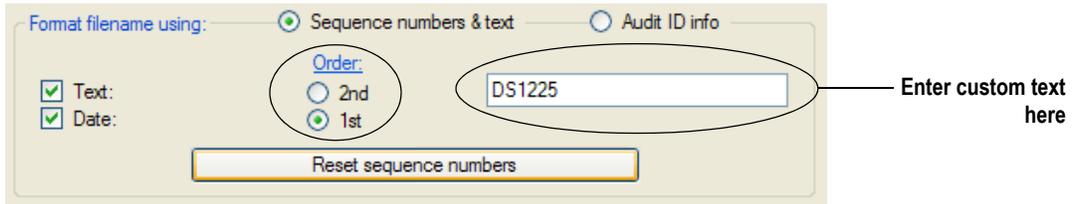
To create the naming format:

- 1 Select the **Sequence numbers & text** button.

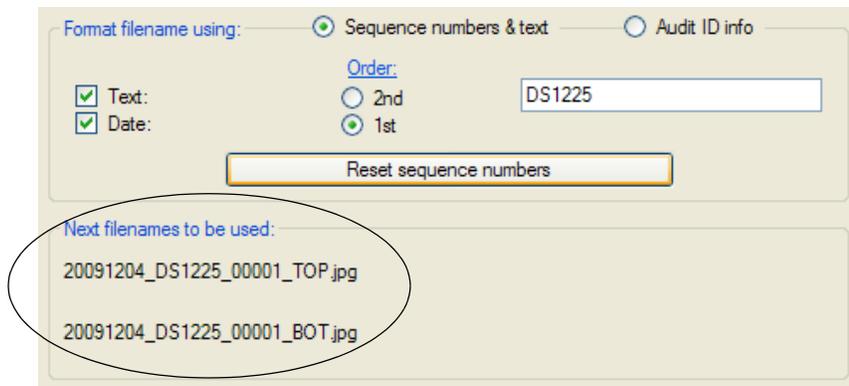
NOTE: Select the Audit ID info button if you want the Audit ID set up in the TWAIN UI to make up the file name.



- 2 Check **Text:** and/or **Date:**, depending on what you want in your filenames.
 - If you choose to add custom text, enter your text in the available field.
 - If you choose to add both custom text and the date, select which item you want placed **1st** and **2nd** with the **Order** buttons.



The **Next filenames to be used:** section will display what your created filename conventions will look like. Notice that in the example, the system places the date first, followed by the custom text, then a sequence number and **TOP** or **BOT** (bottom) as appropriate.



Progress bar

The progress bar appears on the screen when the Capture application is processing images. Enable or disable the progress bar from the Options menu.

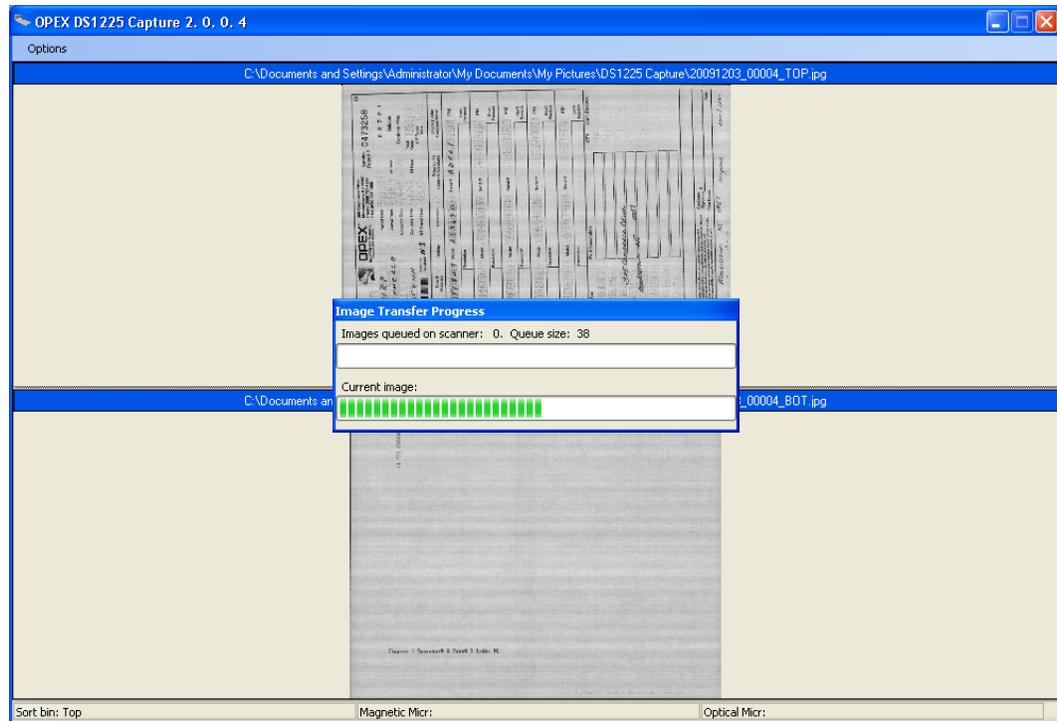


FIGURE 13: Progress bar

Language

Select from the available languages. Contact OPEX Technical Support if you need to add languages to the software.

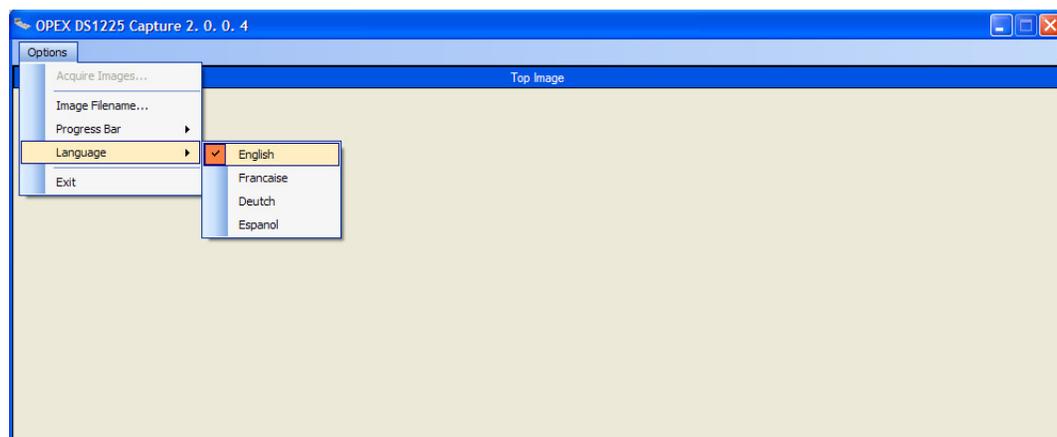


FIGURE 14: Language settings

DS1225 TWAIN Datasource UI

Use the TWAIN Datasource User Interface (TWAIN UI) to configure the scanner. The TWAIN UI provides settings for image quality, how pieces will be sorted, information to print on pieces, etc.

The TWAIN UI has three main sections: one for managing your saved settings, another for setting up Dynamic Scan, and one for making all of the scanner settings. This manual will describe the various functions of the TWAIN UI section by section.

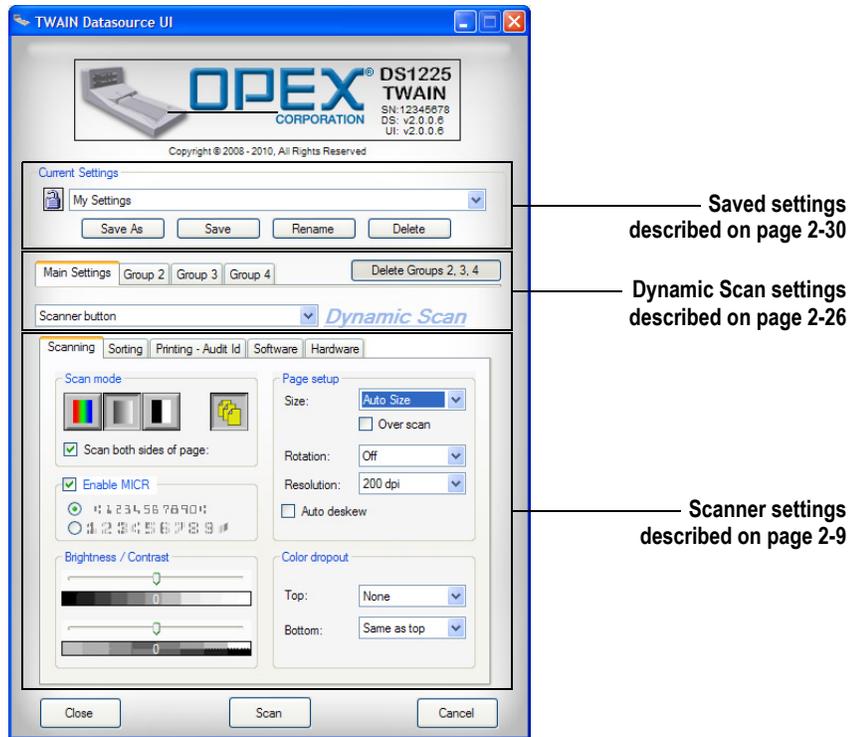


FIGURE 15: TWAIN UI main screen

Scanner settings

The scanner settings define how the scanner will capture images, print audit ID information and sort pieces. The various scanner settings are broken down into categories in the TWAIN UI.

Access the different categories by selecting the tabs in the scanner settings area.

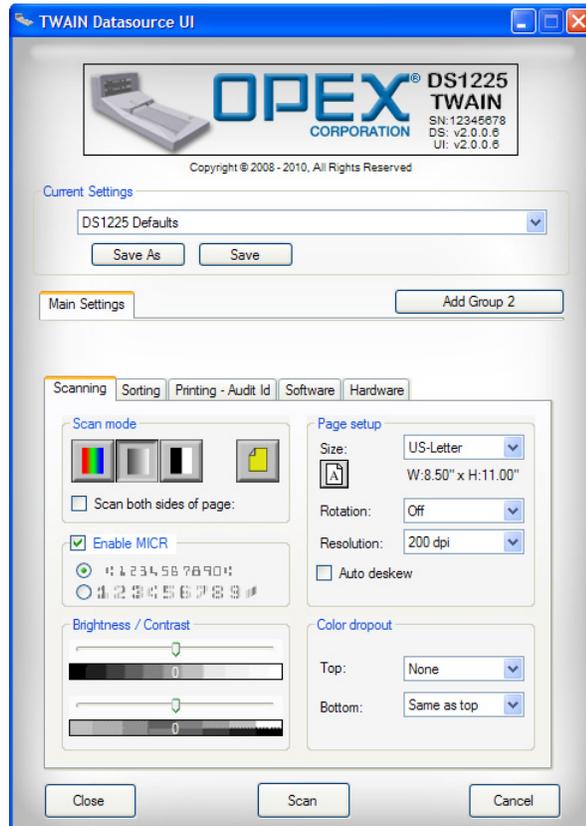


FIGURE 16: Scanner settings

The scanner setting categories are:

Scanning These are general settings for how you plan to process images. Scanning settings include page size, color and brightness and contrast, as well as options for MICR recognition and dropping colors out of images. See page 2-10 for details.

Sorting The sorting settings determine bin assignments for scanned pieces. See page 2-12 for details.

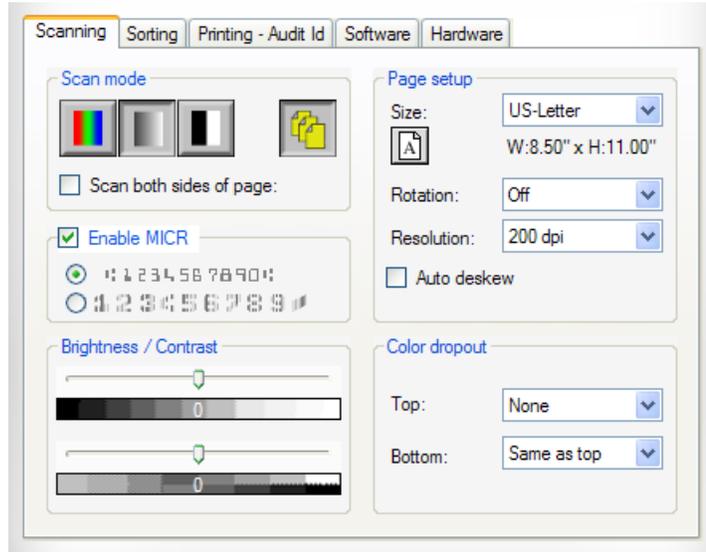
Printing - Audit ID Audit IDs are lines of information the DS1225 can print on pieces. These settings establish what and where information is printed. See page 2-13 for details.

Software The software category contains settings specific to the how the TWAIN UI functions. See page 2-23 for details.

Hardware The hardware settings enable and disable some of the machine-level functions of the DS1225. See page 2-24 for details.

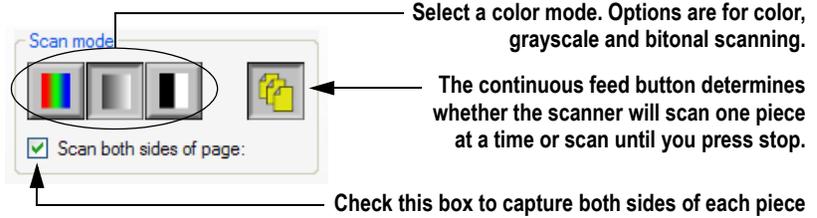
Scanning settings

Click on the Scanning tab to adjust the Scanning settings.

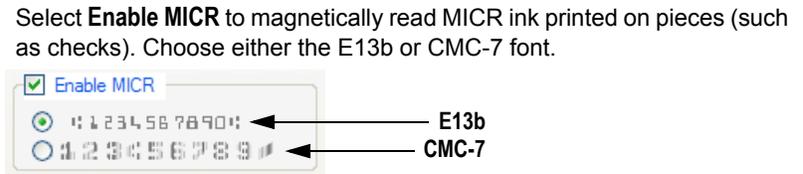


The scan mode settings determine which color mode the scanner will use, the desired feed mode and whether or not you want to scan both sides of pieces.

Scan mode

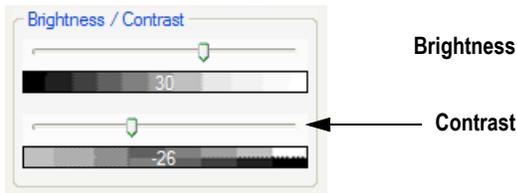


Enable MICR



Adjust the brightness and contrast of images produced by the scanner. Move the sliders left to make images darker; slide them to the right to make images lighter.

Brightness/Contrast



NOTE: The brightness/contrast settings are available when scanning in grayscale and color modes.

When scanning in bitonal mode, this setting determines the value at which shades are converted to solid black or solid white. Higher numbers will convert more shades to white; lower numbers will convert more shades to black.

Threshold

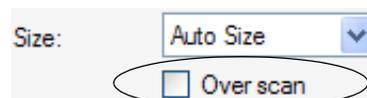


Move the slider adjust the value at which a gray pixel will be converted to black or white

The page setup settings describe the area to be scanned and how the scanner will save resulting images.

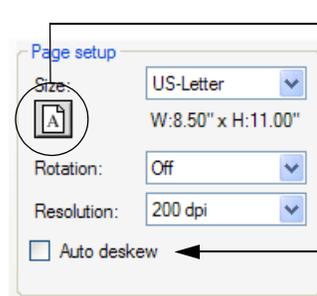
- **Size:** Select from the standard sizes listed, or **Auto Size** to have the software determine the edges of the piece and size the image accordingly. You can also select **Scanner Max** to capture the largest field the scanner can capture (12 x 25 inches).

NOTE: If you select **Auto Size**, another check box labelled **Over scan** will appear below the dropdown box. Check the box to add 1/4-inch of black space around the image.



Page setup

- **Rotation:** Rotate images **90**, **180**, or **270** degrees.
- **Resolution:** Save images at **100**, **150**, **200** or **300** dots per inch.

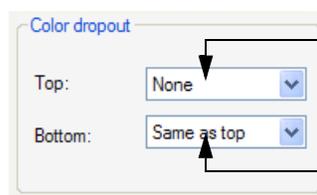


Click here to toggle between portrait and landscape scanning modes.

Check here to have the software automatically "straighten the image out"

Select a color to remove from the top and/or bottom image when scanning in grayscale or bitonal modes. The color you choose will appear as white in the resulting image. The software is capable of removing red, green, blue, cyan, magenta and yellow.

Color dropout

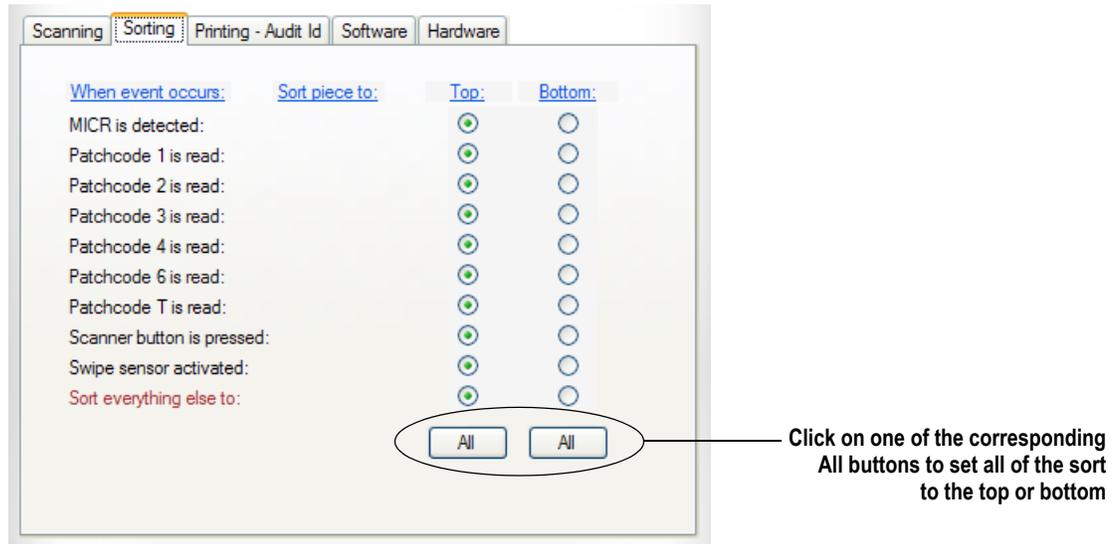


Select a color to remove from the top (front) image

Select a color to remove from the bottom (back) image

Sorting settings

Click on the Sorting tab to establish how pieces are sorted into bins.



Set up the DS1225 to sort pieces to one bin or the other based on a particular event, such as when MICR ink is detected on a piece, or when the configurable Action (Scanner) button is pressed. For each event, select the top or bottom button, depending on how you want to sort pieces.

The events are listed in order of priority. The system will sort a document based on the first event it qualifies for. For example, if the scanner detects MICR ink on a piece, the piece will be sorted according to the “MICR is detected” event, regardless of whether or not the Action button is pressed or the OpAssist sensor is triggered.

NOTE: To sort based on the presence of MICR, make sure you have the **Enable MICR** box checked in the Scanning settings (described on page 2-10).

Printing - Audit ID settings

Click on the Printing - Audit ID tab to set up the information that will be printed on each piece. The Audit ID tab is a little different than the others, as there are sets of sub-tabs that further separate the various printing options.

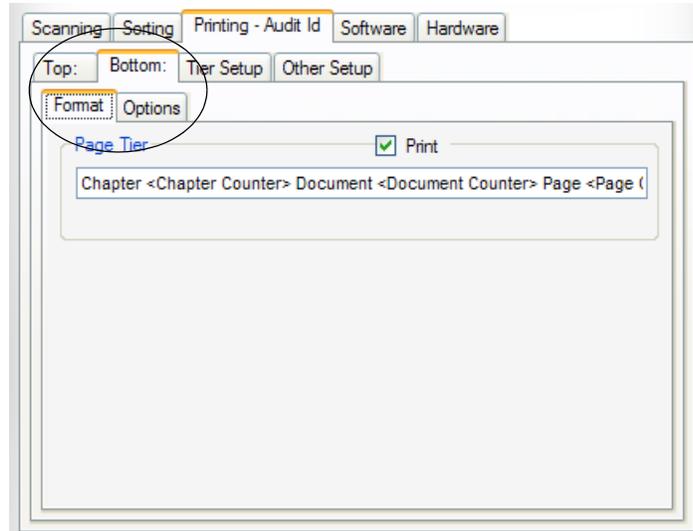


FIGURE 17: Audit ID sub-tabs

Audit IDs can be made up of any combination of “static” text (text that will be printed the same each time), the four “counters” provided by the software, and the current date and time. There are three “tiered” counters, Chapter, Document and Page, which are incremented with each piece or by specified events (such as a patch code, press of the Action button or OpAssist trigger). The fourth counter, the Index counter, is incremented for each piece and is not affected by any events.

Chapter 1 Document 100 Page 004 12/28/2009 02:52pm

FIGURE 18: Sample Audit ID

The three tiered counters have a level of priority, with the Chapter counter having the highest and the Page counter having the lowest. When a higher priority counter is incremented, the lower level counters are reset. The counter can be reset to either 0 or 1, and each counter can be 1–9 digits long.

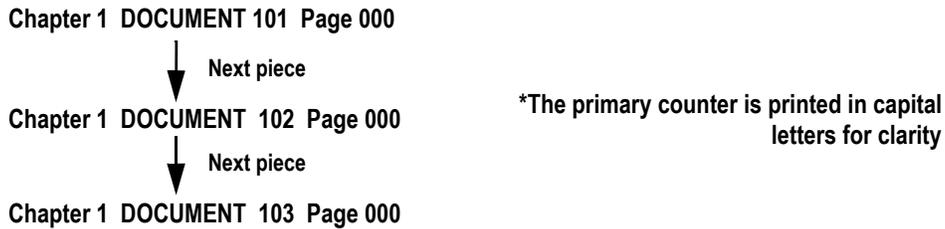
Audit ID events

The events that cause a field to be incremented and reset are configurable. The available events are:

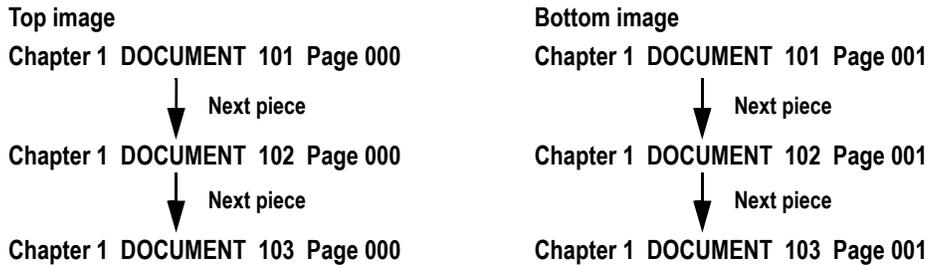
- Patch code: The type of patch code (1–4, 6 or T) scanned determines the action.
- Action button: Pressing the Action button on the scanner.
- OpAssist sensor: Swipe over the OpAssist sensor to trigger an event.
- Piece count: After a specified number of pieces a higher level field will be incremented and the lower level counter will be reset.

Primary counter

The primary counter is incremented when none of the other events has occurred. For instance, if the Document counter is the primary, it will increment for every piece and since the Page counter is a lower level counter, the Page counter will be reset. Using a reset value of 0, the sequence produced will be:



Duplex scanning will cause the Page counter to be incremented for the bottom image even if the Page counter is not the primary. In the previous case the sequence produced will be:



Incrementing other counters

The audit ID events mentioned previously increment counters other than the primary. When the event (such as pressing the Action button) is associated with a higher priority counter, the counter is incremented and all lower counters are reset.

When the event is associated with a lower priority counter, the counter temporarily becomes the primary and is incremented with every scanned piece until the event occurs again. When the event occurs again, the field associated with it is reset and the original primary counter is restored.

Seeding the counters

The counters can be seeded (started) with any number that will fit in the field size specified. When the primary or a higher level counter is seeded with a value other than the reset value, the incrementing of counters will proceed as normal. For example, suppose:

- the Page counter is the primary, and the reset value is 0
- the Document counter is seeded with 92 and the Page counter seeded with 0

In this case, the sequence would be:

Chapter 001 Document 92 PAGE 0



Chapter 001 Document 92 PAGE 1

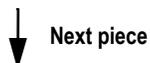


Chapter 001 Document 92 PAGE 2

Now suppose that the OpAssist sensor is set to increment the Document counter. When you swipe the OpAssist sensor, the Document counter will increment and the Page counter will reset:



Chapter 001 Document 93 PAGE 0



Chapter 001 Document 93 PAGE 1



Chapter 001 Document 93 PAGE 2

NOTE: When a counter of a lower level than the primary is seeded with a value other than the reset value, the lower-level counter will increment as if its event had occurred. For example, suppose:

- the Document counter is primary, and its reset value is 0
- the Document counter seed value is 10
- the Page counter is seeded with 4

In this case, the sequence would be:

Chapter 05 DOCUMENT 10 Page 4



Chapter 05 DOCUMENT 10 Page 5

Here, even though the document is the primary counter, the page counter is incrementing for each piece. In this case, the counters are incrementing as if the page level event had occurred. This sequence will continue until the page level event occurs again.

NOTE: See Appendix A: “Audit ID Reference” for more examples of different audit IDs.

Setting up tiers and counters

Use the Tier Setup sub-tab to set up your tiers and counters. First, select how many tiers you plan to use. Keep in mind that the first tier will always be the Page tier, the second will be the Document tier, and the third will be the Chapter tier, in that order.

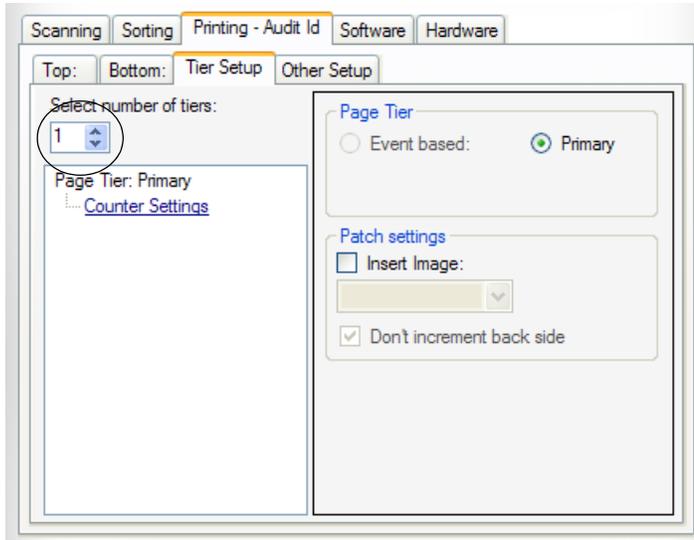
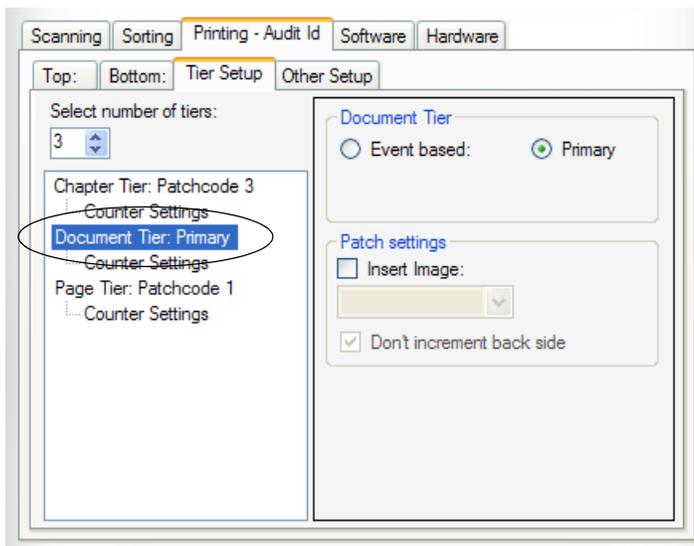


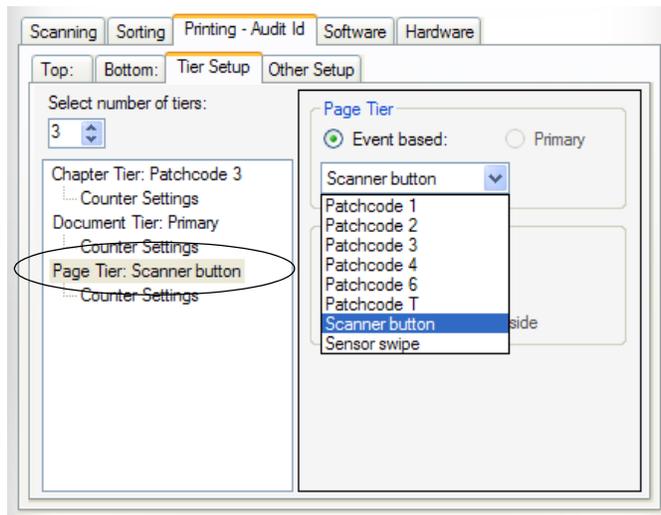
FIGURE 19: Tier setup tab

Each tier has a counter, a print string and an event associated with it. When you have more than one tier, the first thing you should do is determine which one is to be the primary. For more information about the primary counter, see page 2-14.

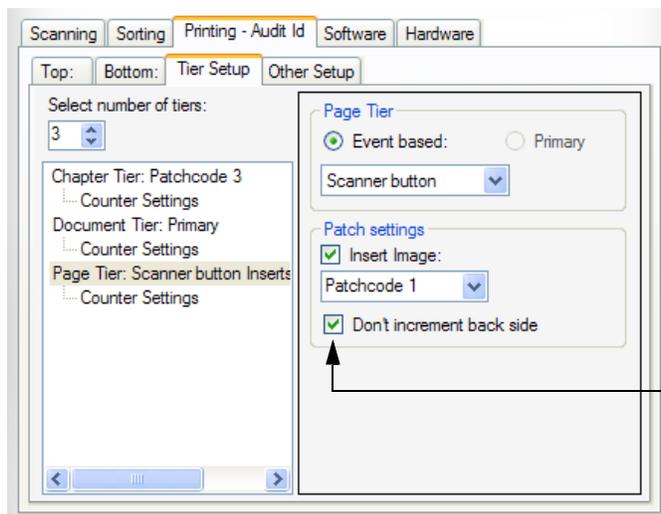


Highlight the desired tier, then adjust its settings as necessary. It is recommended you select a primary tier first. The Page tier is set as the primary by default.

The remaining tier(s) will now default to event based. Choose the events that will trigger the other counters. See “Audit ID events” and “Incrementing other counters” on page 2-14 for more information.



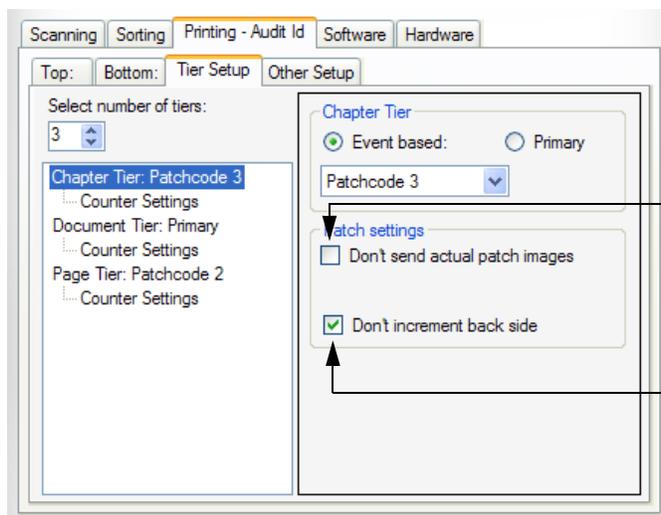
Highlight a tier, then select the event that will trigger it.



Depending on the event you choose, different options will appear in the Patch settings area.

When you select Scanner (Action) button or Swipe (OpAssist) sensor to trigger the event, you can have the software automatically insert a virtual image of a patch code of your choice.

Select this checkbox if you do not want the system to count the back side of the virtual patch code image.

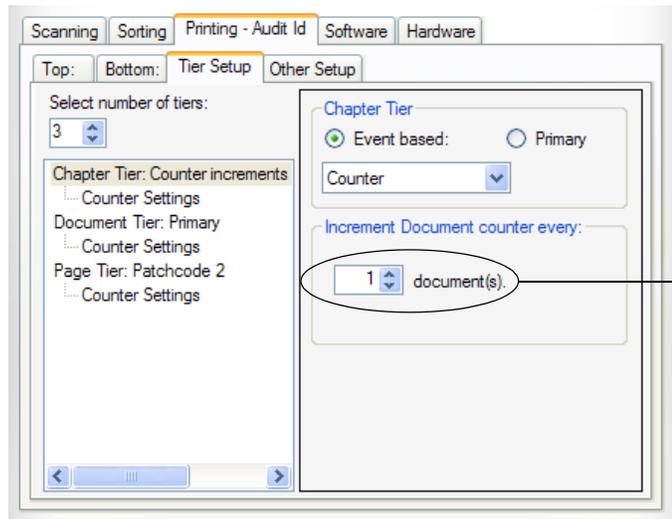


When you use one of the patch codes to trigger the event, you can decide whether or not you want the software to save the image of the patch code.

Select this checkbox if you do not want the system to count the back side of the patch code image.

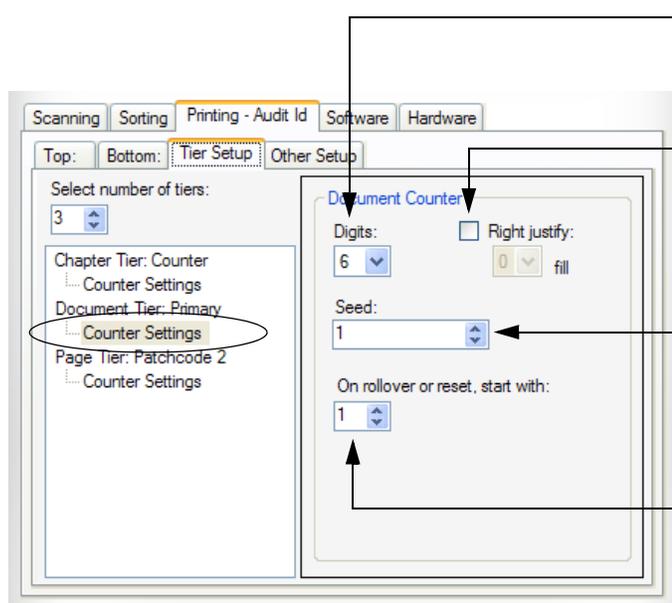
Use the counter event to increment a tier based on how many pieces have been scanned. For example, you can set a counter that will increment after the operator has scanned 5 pieces.

NOTE: When using piece count to manipulate a counter, keep in mind that using a patch code or virtual patch code with another counter will cause the count event to be off by 1. Because of this, it is not recommended to use the piece count event if a patch sheet is required.



When you select the counter event, also choose how many documents will be required to increment the counter

Once you have all the tiers set up, you can set up the counters associated with them. Click on **Counter Settings** for the event to access the counter setup.



Select the maximum number of digits that will make up this counter. For example, if you enter 2 here, the counter will reset after 99.

Check the box to fill any unfilled digits in the counter with spaces or zeroes. If the Digits: setting is at 6 and the count is at 15, the system will print 000015 (or 4 spaces and the number 15).

Enter the number the counter will start with. The seed value can be any number that has the proper number of digits (as stipulated by the Digits: field above)

Set the reset value to 1 or 0. This is the number the counter will start with after it resets.

Establishing the Audit ID

The information that the DS1225 will print on pieces is established on the Format tabs for the top and bottom Audit IDs, as shown in Figure 20.

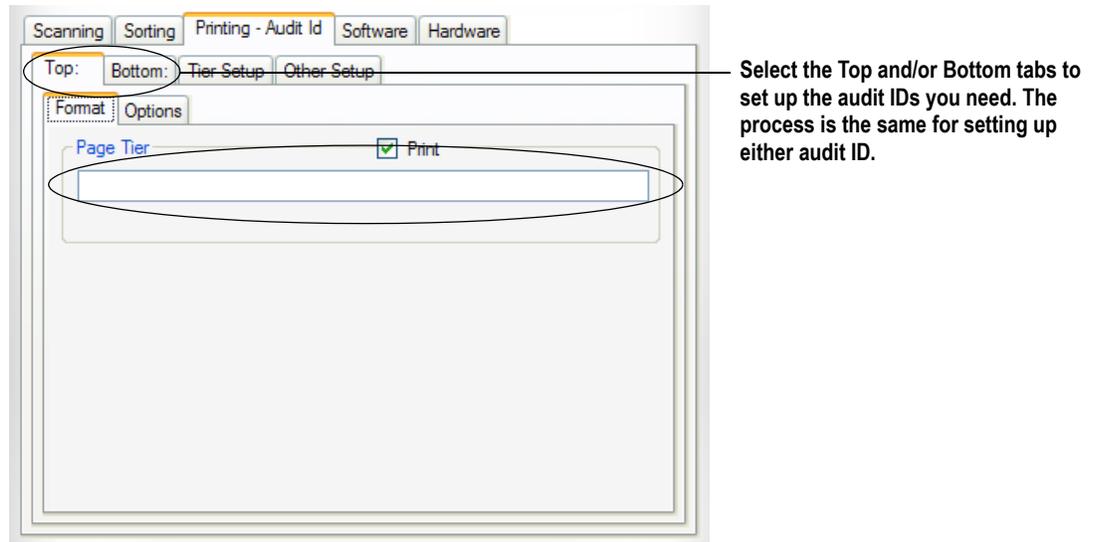
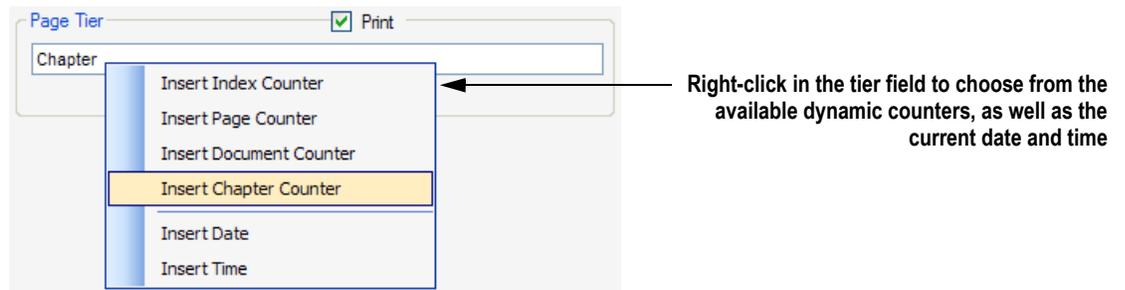


FIGURE 20: Format tab for the top audit ID

You can enter static (non-changing) text directly into the field(s) on the Format tab. This text will appear in the audit ID exactly as you type it.

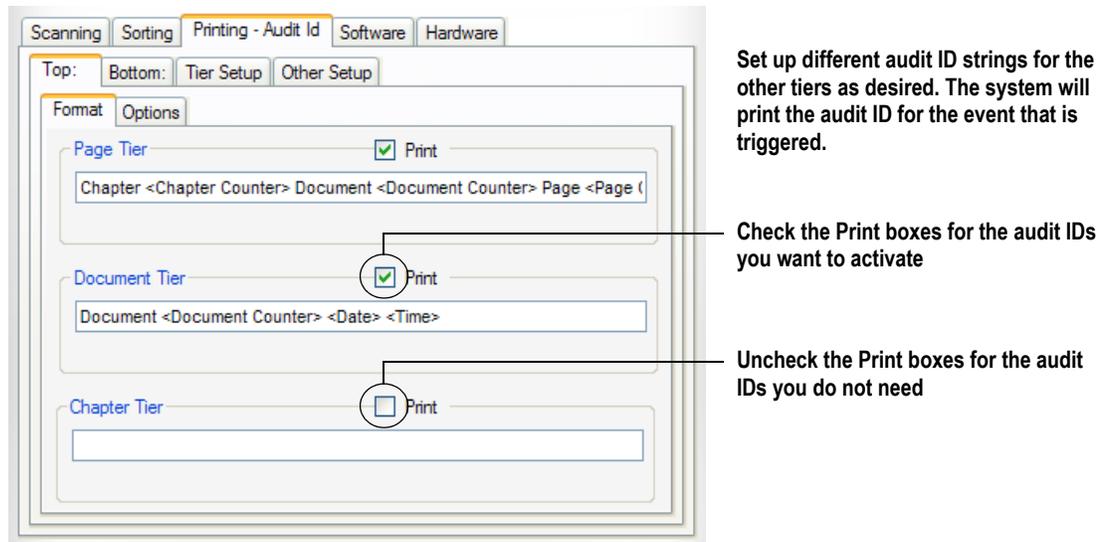
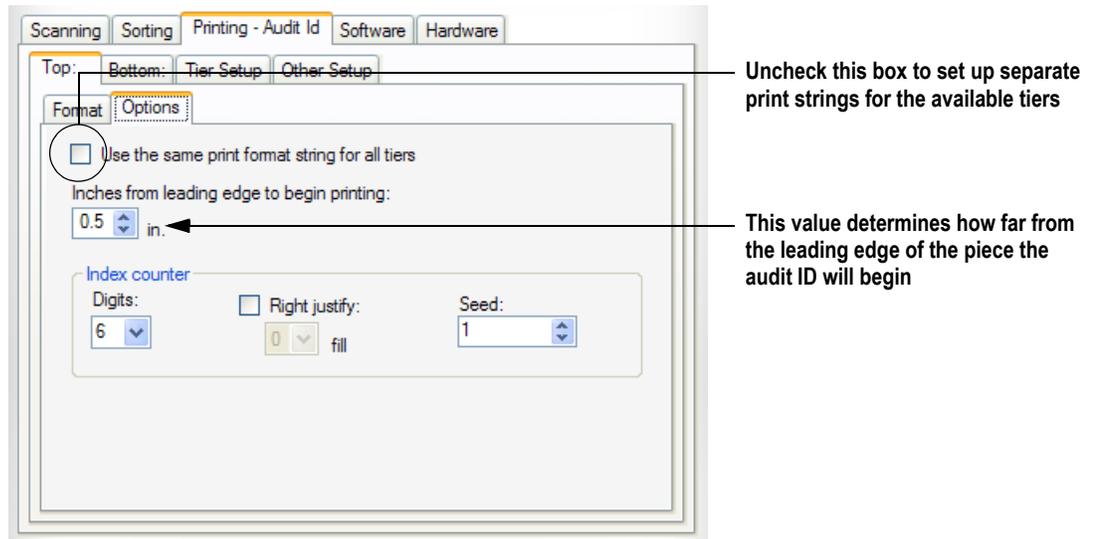


To enter dynamic text (information that will depend on other circumstances), right-click in the field and select from the available elements. The dynamic text will appear in brackets (<>) in the field.



Once you have established the format of your top and/or bottom audit ID(s), click on the Options tab to make the rest of the necessary settings.

The first checkbox, **Use the same print format for all tiers** determines whether or not you want to use a single audit ID for all of the tiers or if you want a separate audit ID for each event. For example, if you want to have a different audit ID print when the Document tier is triggered, make sure this box is not checked and set up the other ID(s) on the Format tab.



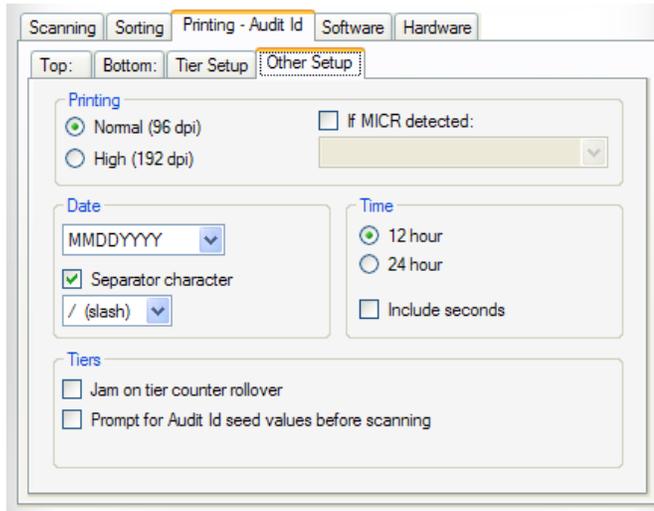
The Index counter increments with each piece and resets to the seed value when the scanner stops and restarts. The Index counter will also reset when the scanner jams.

Set a maximum number of digits for the Index counter. The counter can be made up of from 1–9 digits.

Check the box to fill any unfilled digits in the counter with spaces or zeroes.

Enter the number the counter will start with. The seed value can be any number that has the proper number of digits (as stipulated by the Digits: field above).

The Other Setup tab has more settings for how audit IDs are printed.



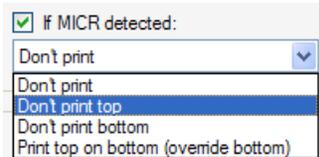
The settings in the Printing area determine the resolution of the audit ID and what the scanner will do when MICR ink is detected on a document.

Select the desired print resolution. The High (192 dpi) setting will produce darker, more legible text but will use more ink to do so.

Printing



Check the If MICR detected: box to set rules for printing audit IDs on documents with MICR ink (such as checks).



Date

Select the desired format and separator character for the date counter.

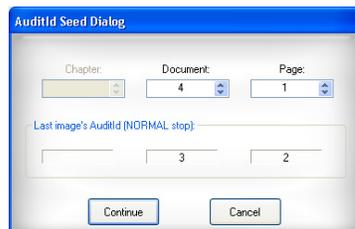
Time

Choose either 12 or 24 hour time format, and whether or not to include seconds within the time counter.

Determine how tiers are handled when certain scanner events occur:

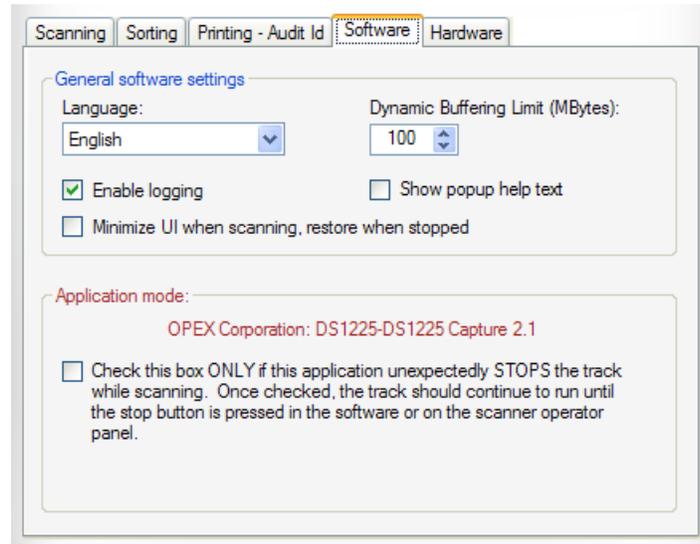
- Select **Jam on tier counter rollover** to have the scanner stop when a counter resets while the machine is running.
- Select **Prompt for Audit ID seed values before scanning** to present a dialog from which the operator can manually set the counter values before the machine starts.

Tiers



Software settings

Click on the Software tab to edit settings related to how the TWAIN UI functions.



General software settings

The general software settings control certain aspects of the TWAIN UI:

- **Language:** Choose from the available languages. The default is **English**.
- **Dynamic Buffering Limit:** Used to pre-allocate enough memory to hold two full-size, full-resolution images. For applications that are extremely memory intensive and/or take images slowly because of significant post transfer processing, this behavior can hog or fragment memory. A setting of **0** will disable this feature.
- **Enable Logging:** Check this box to keep a software log of events. The log files (.txt) are stored in C:\WINDOWS\twain_32\DS1225\Log.s.
- **Show popup text help:** Check this box to display popup help text in the TWAIN UI. To activate the text, roll the mouse pointer over buttons and tabs and other areas of the TWAIN UI to read a short description of the subject.



- **Minimize UI when scanning, restore when stopped:** The TWAIN UI can automatically minimize itself when you press the Scan button, and restore itself to its full size when you stop the machine. Check this box to enable the functionality.

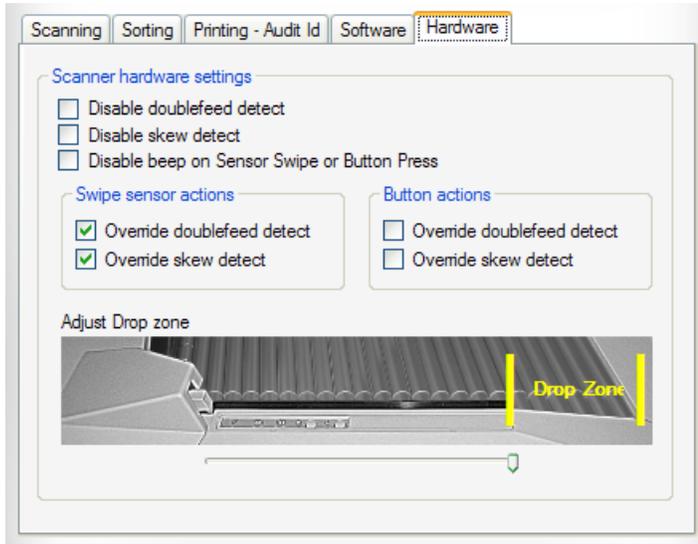


Application mode

Check this box **ONLY** if the TWAIN UI unexpectedly stops the track while scanning. Once checked, the track should continue to run until the stop button is pressed in the software or on the scanner control panel.

Hardware settings

Click on the Hardware tab to adjust settings for some of the hardware features of the DS1225.



Scanner hardware settings

The scanner hardware settings manage some of the machine functions of the DS1225:

- **Disable doublefeed detect:** Check the box to turn the scanner's multifeed detector off. With this box checked, the scanner will not jam if more than one piece (or if an envelope or other thicker piece) is sent through the machine.
- **Disable skew detect:** In normal operation, the scanner will jam if pieces enter skewed. Check this box to turn off the skew detection.
- **Disable beep on Sensor Swipe or Button Press:** Check this box to disable the audible indicator of the Action button and OpAssist sensor on the DS1225.

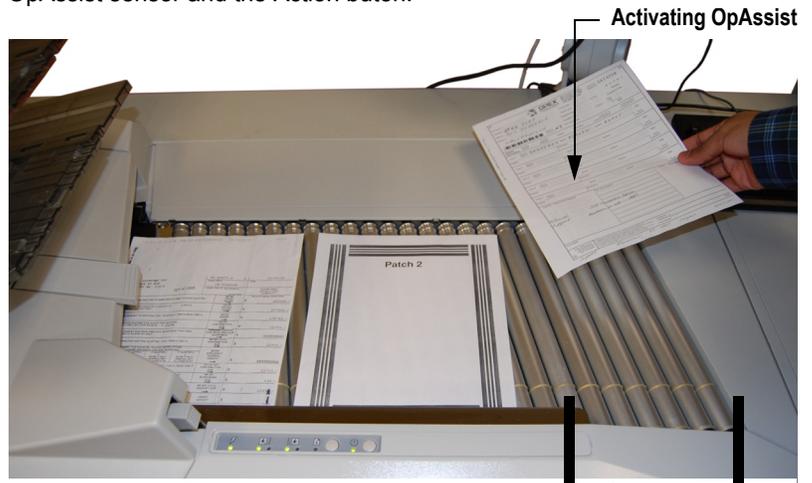
Swipe sensor actions

Configure the actions that take place when an operator activates the OpAssist sensor. By default, swiping the sensor will **Override doublefeed detect** and **Override skew detect** for the next piece scanned.

Button actions

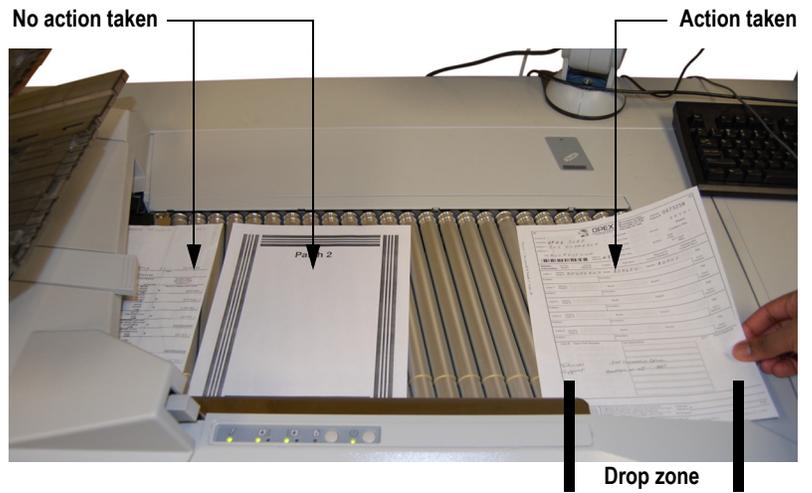
Configure the function of the Action button. You can set the Action button to **Override doublefeed detect** and **Override skew detect** for the next piece scanned.

Move the slider to the left and right to adjust the size of the drop zone. The drop zone represents where you will drop pieces, and the software can more accurately time how it applies the actions you trigger with the OpAssist sensor and the Action button.

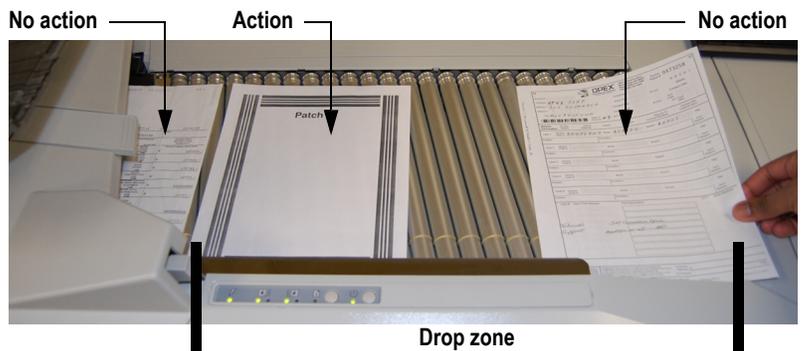


When you trigger OpAssist (or press the Action button) the scanner will apply the specified action for the piece dropped in the drop zone, not the pieces that are already on the track.

Adjust drop zone

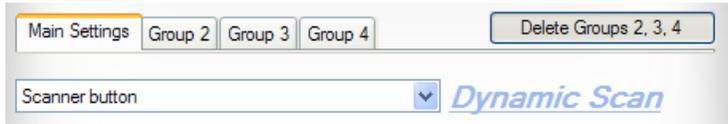


NOTE: If the drop zone is set as shown below, the action will be taken on the second piece, and NOT the piece you used to swipe the OpAssist sensor. In this case, the action is always applied to the next piece to enter the scanner.



Dynamic Scan

Dynamic Scan allow you to set up as many as four different “groups” of scanner settings that you can switch between *while* you run the scanner. For example, if you want to scan certain pieces in color and others in grayscale, you can change the way the scanner captures images on-the-fly.



There are several “triggers” you can use to switch from group to group while scanning pieces. Possible triggers include:

- **Scanner (Action) button:** press the Action button on the DS1225’s control panel (see page 1-10) to switch/activate groups
- **OpAssist sensor (Sensor swipe):** wave the piece (or your hand) over the OpAssist sensor to switch/activate groups
- **Patch code:** scan a piece with a specific patch code (1–4, 6 or T) to switch/activate groups.

Creating groups

The groups you will set up will all be based on the settings you make for the Main Settings tab in the Dynamic Scan setup area. Set up your Main settings first, then add more groups as you need them.

- 1 When you have your Main Settings established and you are ready to make another group, click **Add Group 2**.

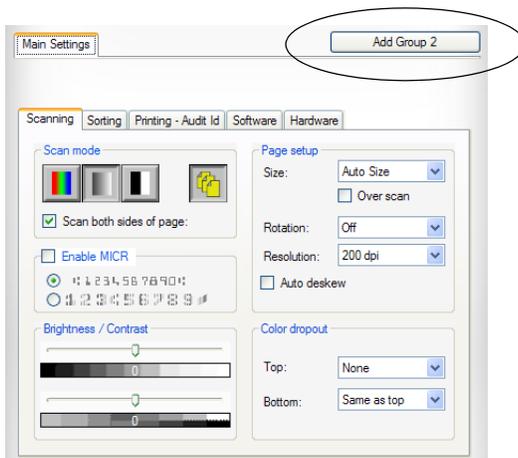


FIGURE 21: Main settings tab

- Click on the Group 2 tab to adjust the alternate settings. Make the adjustments in the settings as necessary.

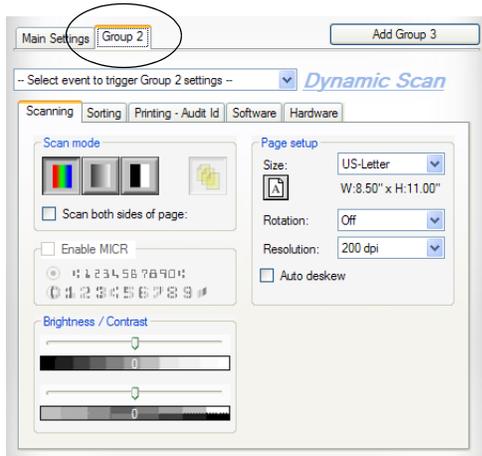
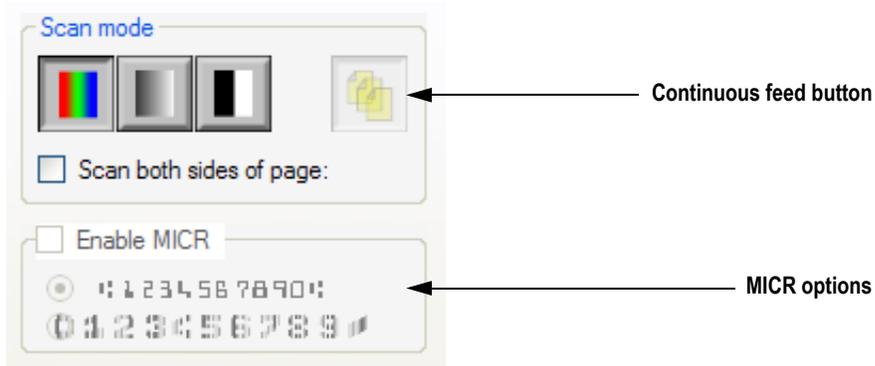
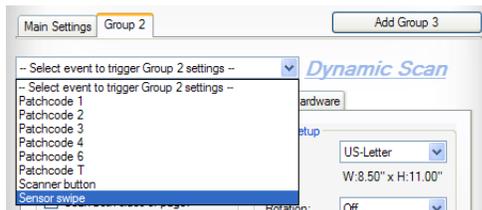


FIGURE 22: Group 2 settings

NOTE: Notice that some of the settings in the Group 2 tab are grayed out (such as the **Continuous Feed** button and the **Enable MICR** options). These settings cannot be switched on-the-fly and are not included in the group tabs. For these settings, the selections made in the Main Settings tab dictate how the scanner will function.

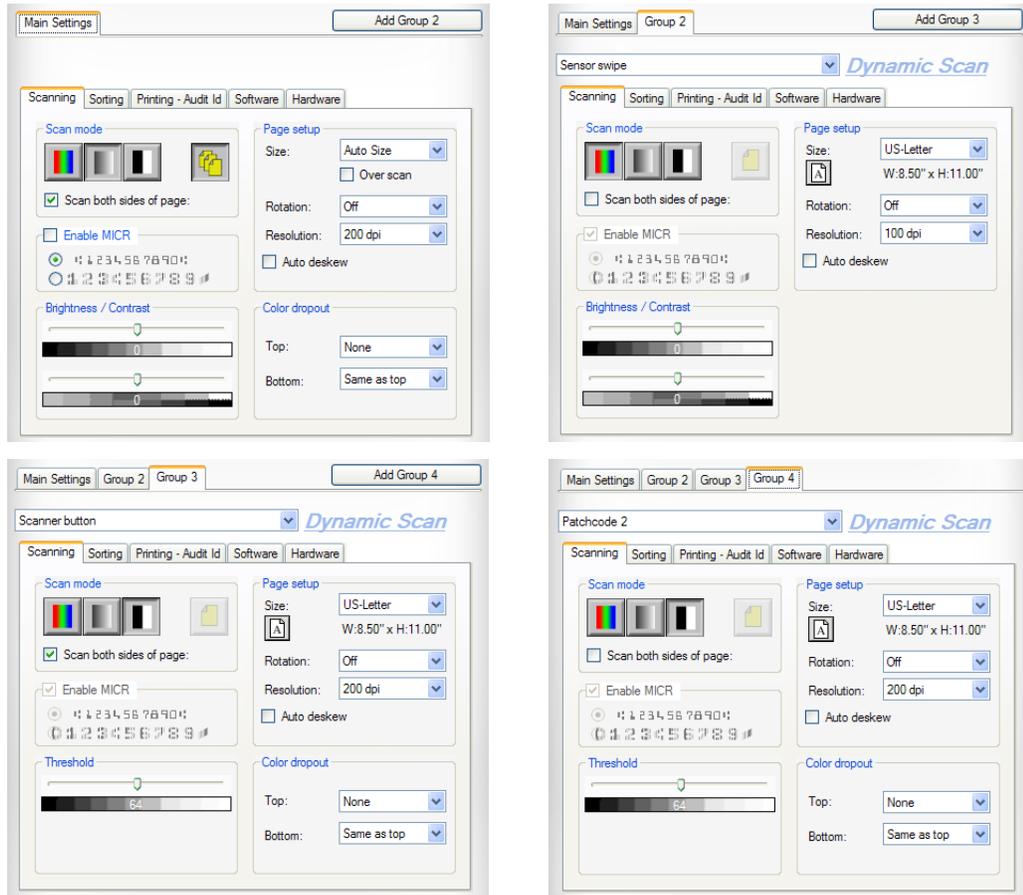


- Select the “trigger” for the new group. If you only set up the two groups, the Group 2 trigger will switch between the Main Settings and Group 2 settings.



2 Software

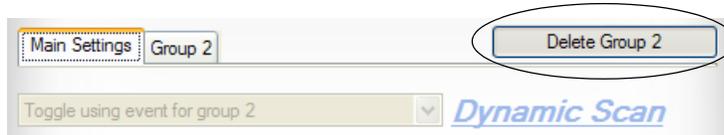
- Repeat steps 1–3 for additional groups you need to create (up to 4).



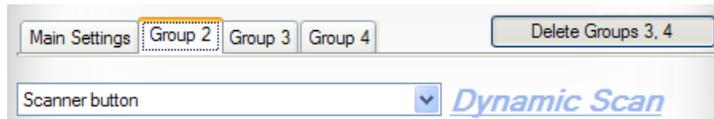
NOTE: If you only set up two groups (the Main Settings and Group 2), you only need one trigger to switch back and forth. If you set up more than two groups, each group (including the Main Settings) will need a unique trigger to activate it.

Deleting groups

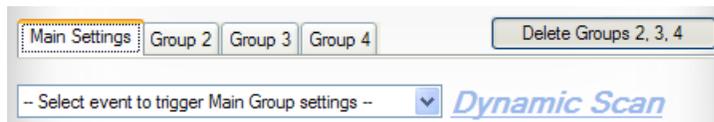
To delete a group, select the group to its immediate left. The button to the right will read **Delete Group #** (2 in the example below). Click on the button to delete the group.



To delete more than one group, select the first group you want to keep. The **Delete Group #** button will appear, prompting you to delete all of the following groups.



Group 2 selected, groups 3 and 4 can be deleted



Main settings selected, groups 2, 3 and 4 can be deleted

Saving your settings

The TWAIN UI allows you to save the settings you make for easy access later. After you have made your necessary settings:

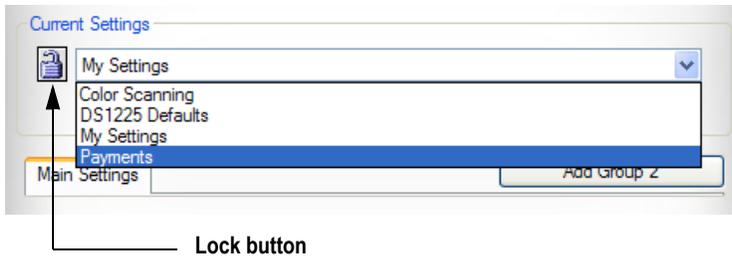
- 1 Click the **Save As** button at the top of the TWAIN UI (see Figure 15).
- 2 Enter a name for your settings in the Save the current settings... dialog.
- 3 Click **OK**.



The TWAIN UI will now make your saved settings the default, meaning that each time you open the TWAIN UI you will begin with these settings.



All of the previously-saved settings will appear in the dropdown list. Save settings for the different ways you want to run the scanner, so you can select them quickly and easily when you are ready to scan.



NOTE: Click on the **Lock** button to prevent the currently-selected settings from being changed.

Scanning

Chapter

3

Basic Scanning Tutorial..... 3-1

 Removing documents from an envelope..... 3-2

 Skew..... 3-2

 Multifeed Detection..... 3-3

 MICR 3-3

 Scanning envelopes (or multiple items) 3-3

 Dropping documents from envelopes..... 3-4

 Clearing a Jam 3-6

Basic Scanning Tutorial

- 1 Make sure the DS1225 is connected to your computer with the provided USB Type 2 cable, or an equivalent, hi-quality USB cable.
- 2 Power up the DS1225 first, then power up the computer.
- 3 On the DS1225, watch the **Power indicator LED** on the control panel as it cycles through three colors:
 - Red - when the DS1225 power switch is turned on, indicating power is present.
 - Yellow- indicates the system has gone through its initialization process.
 - Green- indicates the system has connected to the PC via TWAIN.
- 4 If this is the first time you've connected the DS1225 to the computer, you will get a "Recognize new Hardware" screen.
- 5 Insert the provided TWAIN Driver CD into the CD/DVD drive on the computer.
- 6 Follow onscreen instructions for installing the driver.
- 7 Open the capture application that you want to use on the computer.
- 8 Stand in front of the DS1225 so that the sort trays are to your left.
- 9 Use the capture application to start the conveyor. The green Start/Stop LED will light to indicate that the rollers are turning.

NOTE: If you are scanning large documents, extend the sort trays as described in "Preparing the Sort trays" on page 3-5.
- 10 Drop the documents that you want to scan facing up on the conveyor. The bottom of the document should be the side closest to you. The DS1225 can easily accept either portrait or landscape oriented documents (see Figure 23).

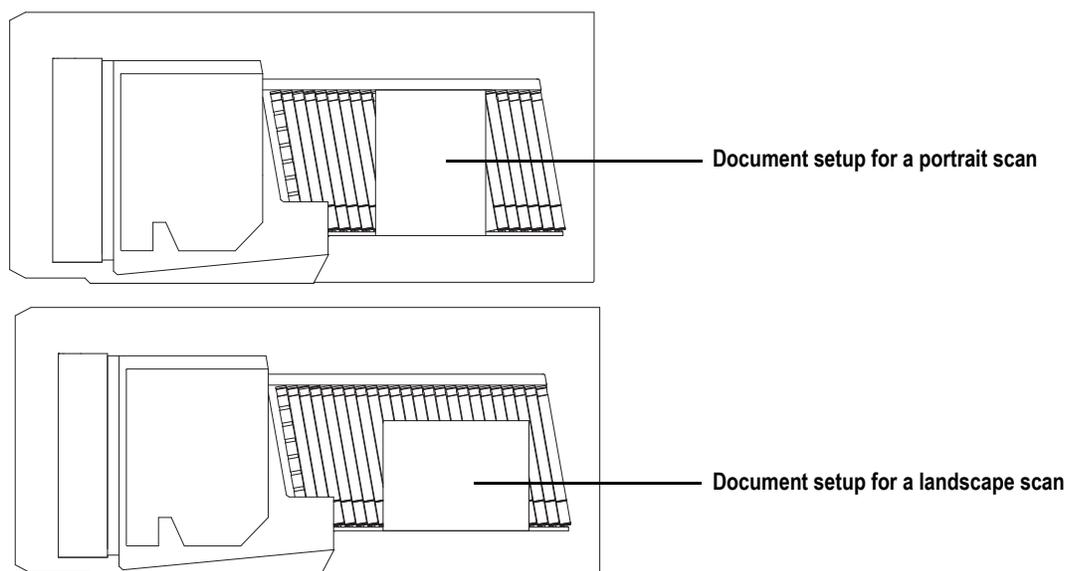
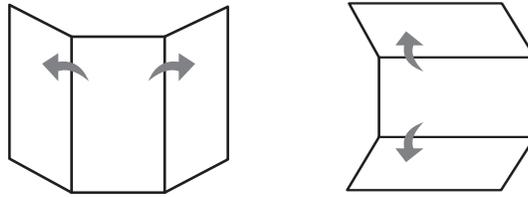


FIGURE 23: Document Orientation (landscape/portrait) - bird's eye view

- 11 The document moves through the DS1225, passes the imager, and the scanned image appears in your capture application.
- 12 Press the **Start/Stop** button in the control panel to stop the conveyor.

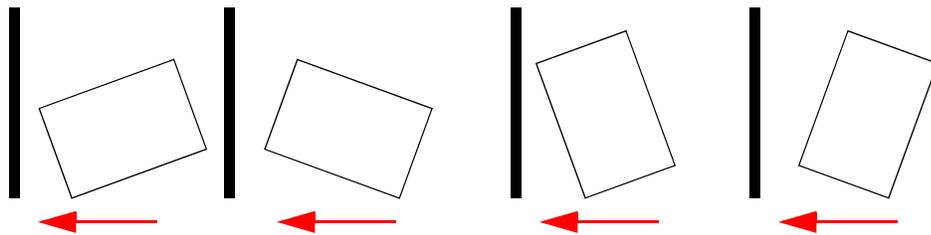
Removing documents from an envelope

Documents that are tri-folded tend to have the top and bottom sections lifted up. Prior to dropping any tri-folded documents, flatten the ends, allowing for a smoother feed.

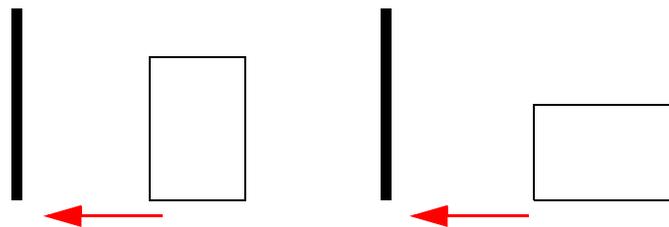


As documents are dropped onto the conveyor, it's important to drop them in such a way as to have the documents fully justify to the side rail prior to entering the feeder. The conveyor rollers are angled to assist in justifying the documents to the side rail as they are dropped. Drop the documents far enough back so that they will have time to straighten. If documents are not fully justified as they enter the feeder section, skew jams may occur. It should also be noted that enough space gap should be allotted between documents. At least ½ inch between documents will provide for proper image capture.

Examples: When dropping documents, give enough time for items to justify. The thick line indicates feeder entrance. The arrow indicates the paper path.



WRONG - In these 4 examples, the documents are dropped too close to the feeder to be justified



RIGHT - Documents should be as aligned as possible as they enter the feeder

Skew

Skew is a term used to identify when a document is misaligned when scanned. Typically, a skewed document prevents the scanned image from being read properly.

Document skew is determined by the angle in which an item enters the scanner. The angle is calculated by a set of LED transmit and receiver parts that detect when one

sensor is uncovered for a while. If the angle is greater than 2 degrees, then the system will jam for "too skewed". If it jams for 5 degrees or more, then the MICR section should be checked and documents remove.

Multifeed Detection

Ultrasonic multifeed detection is incorporated into the DS1225 for added protection against double-feeds. Overlapped documents are identified before entering into the scanner and causing jams.

NOTE: Documents such as envelopes, paper folds, sticky notes on documents, or smaller items stapled or taped to larger sheets of paper would cause a multi-feed detection stoppage. We recommend removing staples or any metal objects before scanning to prevent damaging the DS1225.

MICR

The DS1225p uses a Magnetic Ink Character Recognition (MICR) system to read magnetic ink printed on checks. MICR is a technology used to read characters printed in a special font with a special type of ink. This ink contains iron oxide, which is capable of being magnetized. The DS1225p uses the information printed in the MICR line to identify checks, and provide data to a customer for electronic processing.

NOTE: Not every capture application is enabled to decode the MICR read.

Scanning envelopes (or multiple items)

Due to the folds and design of an envelope, it consists of more than one paper layer, and therefore, the DS1225's multifeed protection function will detect an envelope as a "multiple item" and will stop the envelope from passing through. You can override the multifeed protection function by using the OpAssist feature. The OpAssist feature works by momentarily blocking a small sensor which instructs the system to ignore the multifeed detection for the next document entering the system. When an item is placed over the sensor, the LED will momentarily turn amber, it will then change to green and remain enabled until an item passes the ultrasonic sensor.

NOTE: Make sure the last document entering the scanner has cleared the MFD prior to waving the item over the sensor.

To scan envelopes (multiple items)

- 1 Power up the machine as described earlier.
- 2 Wave the envelope (or item) over the OpAssist sensor.

When an item is waved above the sensor, the green LED lights and the OpAssist annunciator will beep, signifying that the multifeed protection is now deactivated.



3 Scanning

- 3 Drop the item facing up on the conveyor.
- 4 After the item has been scanned, the LED is no longer lit, and the system returns to multifeed protection.

Dropping documents from envelopes

If the job you're scanning requires the envelope as a transaction boundary, then it may be necessary to drop the items in a specific order for better throughput.

- 1 Pick up the envelope with your left hand, remove the contents with the right hand.
- 2 Drop the envelope.
- 3 Open and unfold letter.
- 4 Drop each document with the left hand.
- 5 Repeat the cycle with every new document of mail.

Preparing the Sort trays

If you are scanning large documents, pull out the sort tray extensions (see Figure 24).

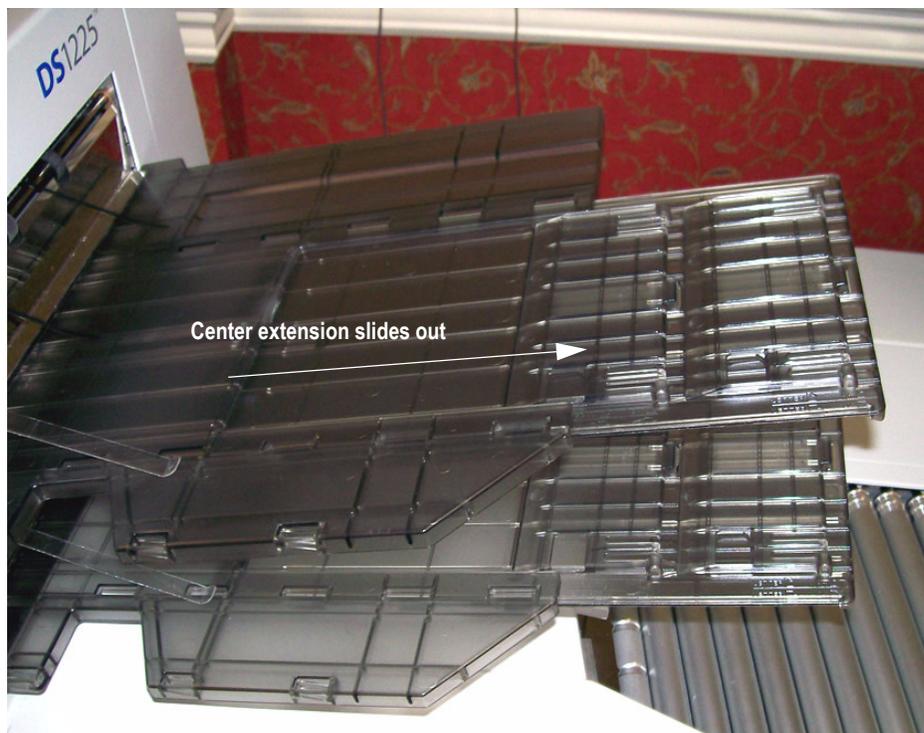


FIGURE 24: Sort tray

For even longer documents, you can extend the center tab as shown in Figure 25.

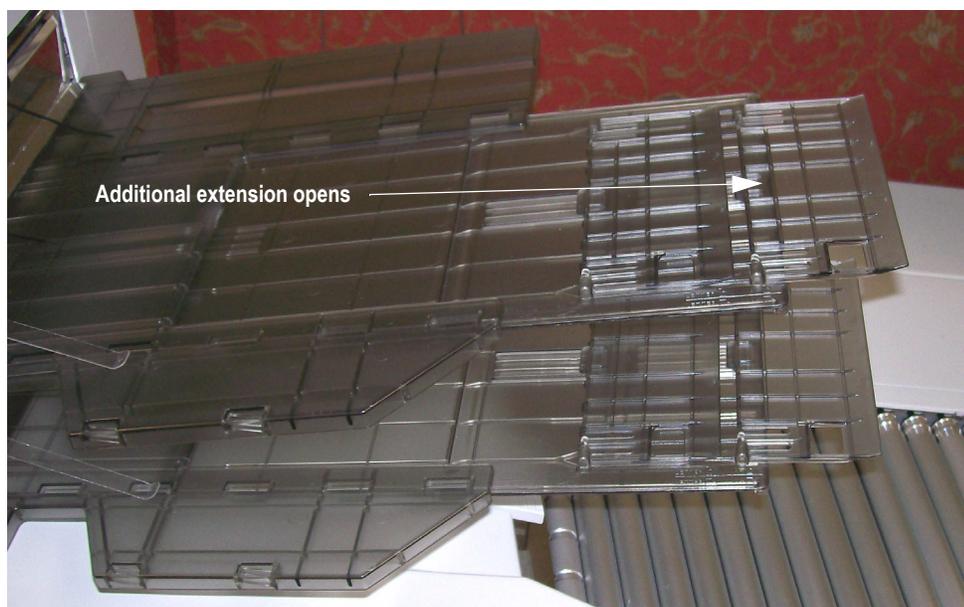


FIGURE 25: Sort tray - Extended setting

Clearing a Jam

The feeder roller is a locking style roller and will not turn backwards. If a document you are scanning gets caught in the feeder roller, trying to pull the document out in the opposite direction of how the roller spins could damage the document. You can remove a jam from the feeder roller area following these steps:

- 1 Push down on the AntiJam roller (the lower roller). This releases the tension holding the document in place.
- 2 Push the document away from you, in the direction of the arrow shown in Figure 26.

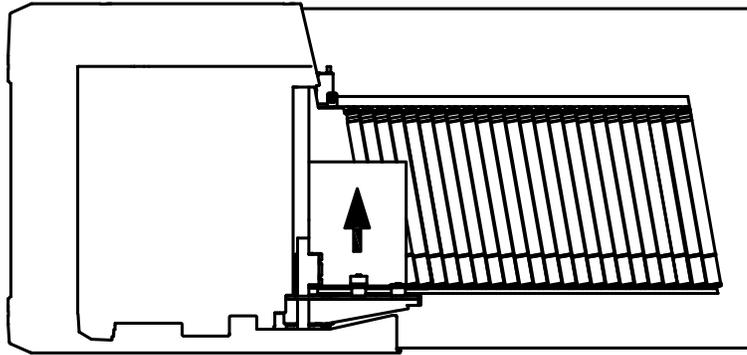


FIGURE 26: Clearing a jam

To open the clamshell

- 1 Simply lift the latch and raise the clamshell.

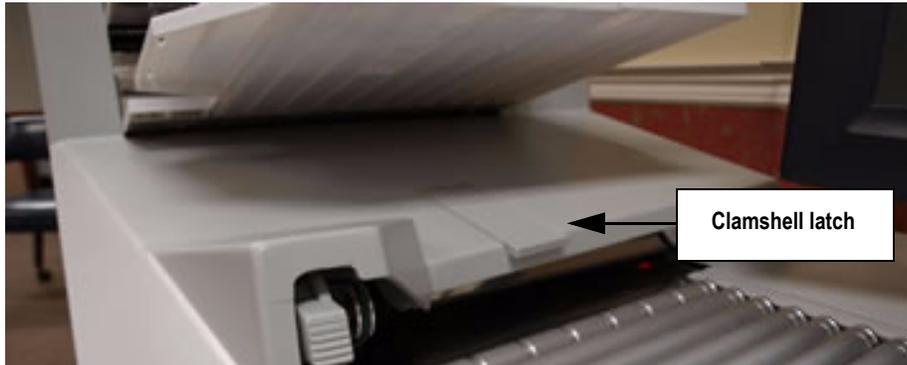


FIGURE 27: Clamshell latch

To close the clamshell

- 1 Carefully lower the clamshell until it is in the closed position.
- 2 While holding it down, press down on the latch (see Figure 28).



FIGURE 28: Closing the clamshell

Maintenance

Chapter

4

Replacing consumables 4-1

Removing/Replacing the Printer Cartridge 4-2

 Adjusting the Printer Carriage Position 4-4

Removing/Replacing the MICR Wiper 4-5

Removing/Replacing the Feeder O-Ring..... 4-7

Cleaning 4-9

Replacing consumables

At times, you may need to replace the consumables on the DS1225, which include:

- Printer cartridge(s)
- The MICR wiper assembly
- Feeder O-ring

This section will describe how to replace each of these items.

Removing/Replacing the Printer Cartridge

The scanner's imprinter and HP ink cartridge are accessible when the clamshell is open. When you remove a cartridge, pay close attention to the position and orientation of the cartridge so it can be replaced properly.

When you install a new printer cartridge, first check the expiration date of the new cartridge you plan to use. The cartridges, when stored in sealed containers, have a shelf life of two years from the date of manufacture.

The DS1225 uses standard HP inkjet cartridges - Model #C6602A (black), available at most office supply stores, or contact OPEX Technical Support at: 1-800-673-9288 to order a new printer ink cartridge (OPEX part no. 3387500).

To remove/replace a printer cartridge:

- 1 Disengage the latch securing the clamshell in place and lift it up (see Figure 29).

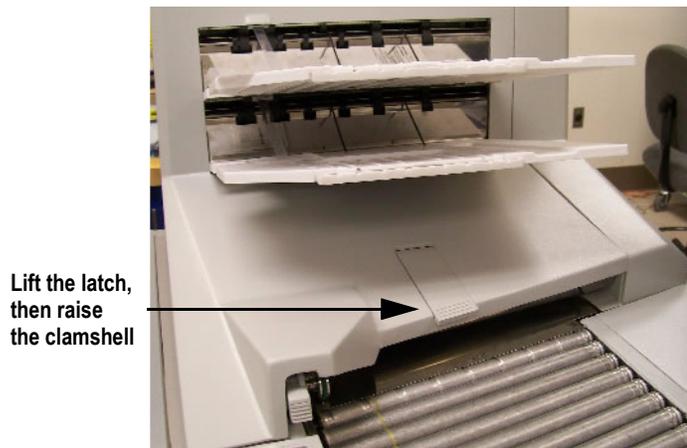


FIGURE 29: Opening the clamshell

- 2 With the clamshell open as high as it can go, press the hinged paper guide cover plate to release the latch and access the printer. The optimal location for pressing the cover plate is between the two small screws.

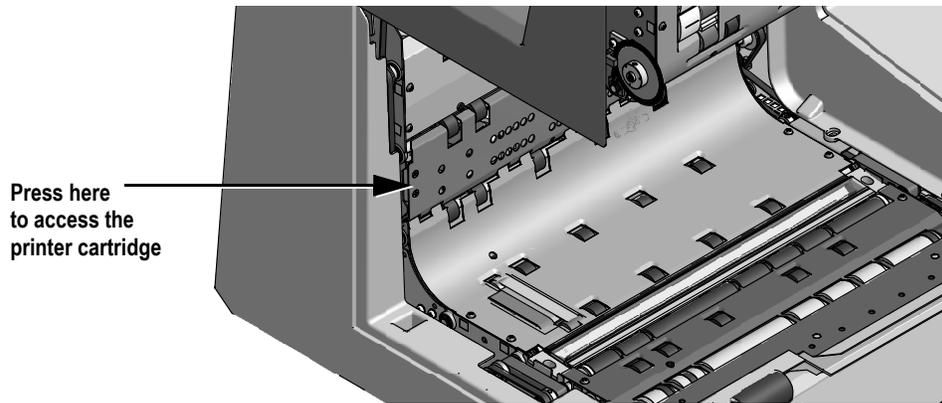


FIGURE 30: Opening the paper guide cover plate

- 3 Access the printer cartridge (refer to Figure 31).

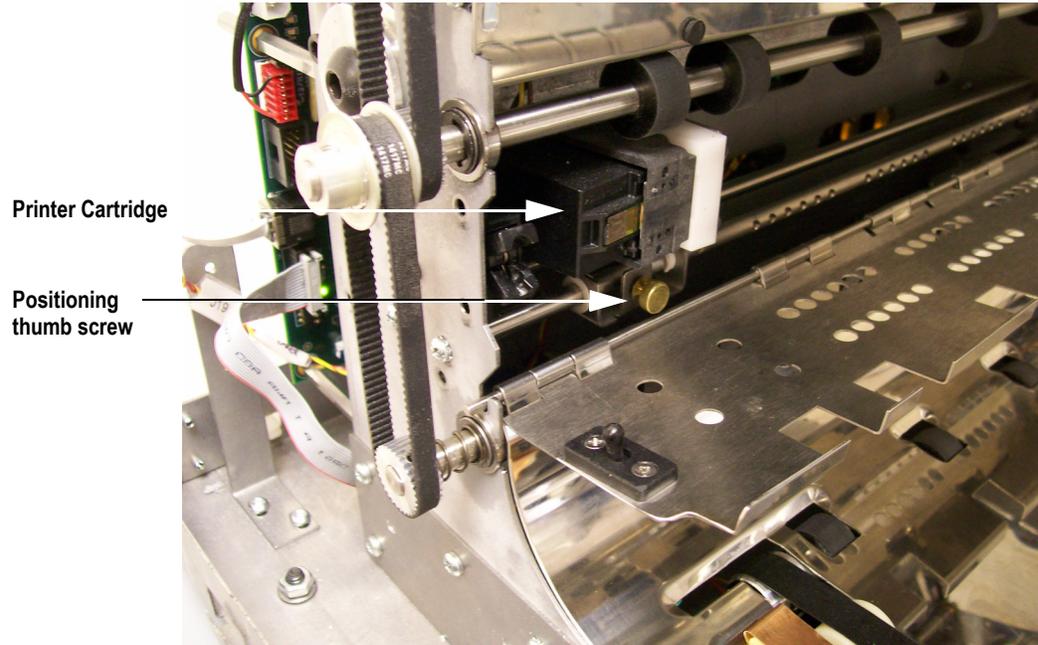


FIGURE 31: Accessing the printer cartridge

NOTE: The printer cartridge is easier to remove if the printer carriage is moved towards the center of the machine. Refer to “Adjusting the Printer Carriage Position” on page 4-4 for instructions.

- 4 Pull the tab on the printer cartridge and rotate the cartridge outward (Figure 32).

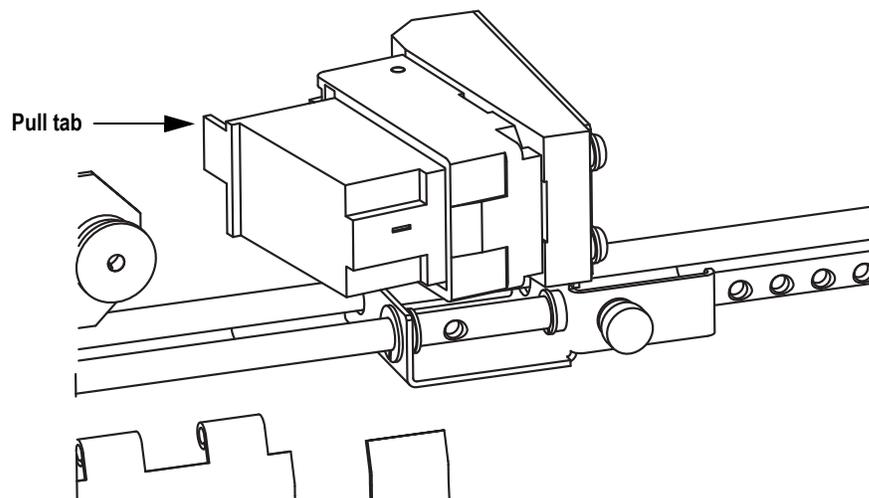


FIGURE 32: Cartridge removal

- 5 Remove the cartridge.
- 6 Insert the new cartridge by tipping the front end of the cartridge in first, and then pushing in the rear of the cartridge until it “clicks” into place.

- 7 If you moved the position of the cartridge assembly, return it to its previous position and tighten the setscrew.
- 8 Press the reset cartridge button on the control panel.

Adjusting the Printer Carriage Position

You can adjust the vertical print position on documents by moving the printer carriage. The printer carriage is fixed to a shaft with detents that position the printer so it sprays ink through the holes in the paper guide (see Figure 32). A thumb screw holds the printer in the detents. If you do not position the printer in a detent, the thumb screw sticks out, preventing you from closing the paper guide.

To adjust the carriage position, loosen the thumb screw, slide the carriage to a new detented position on the shaft, and then retighten the thumb screw.

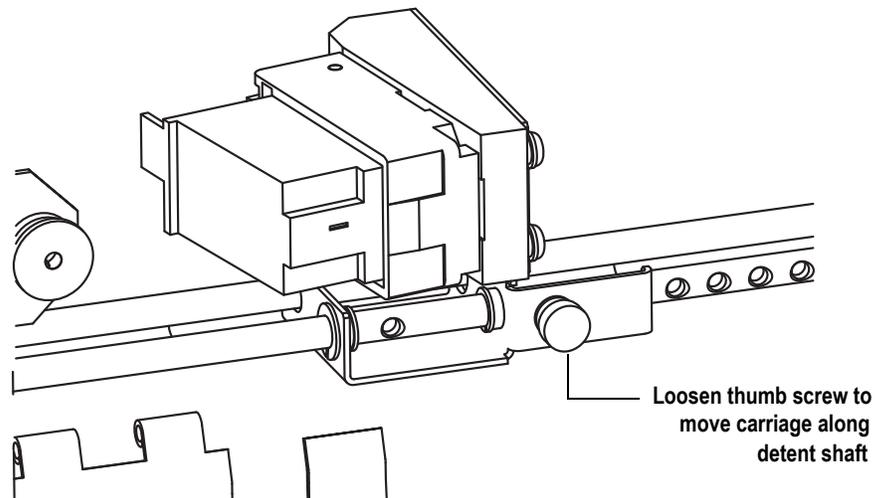


FIGURE 33: Adjusting printer position

Removing/Replacing the MICR Wiper

The MICR wiper assembly is replaceable by the user. The wiper should not wear out that often, but it can get bent or mangled, and then cause jams.

Contact OPEX Technical Support at: 1-800-673-9288 if you need to order a new MICR wiper (part no. 7250601).

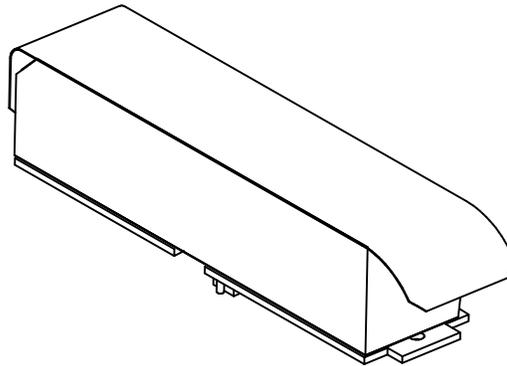


FIGURE 34: MICR Wiper assembly (part no. 7250601)

The metal wiper is glued to a foam pad. The other side of the foam pad is glued to a metal base. A grounding wire is soldered from the wiper to the base.

To replace the MICR Wiper

- 1 Finish any jobs that are running and power down the DS1225.
- 2 Disengage the latch securing the clamshell and lift it up (see Figure 29 on page 4-2).
- 3 Locate the MICR wiper (see Figure 35).

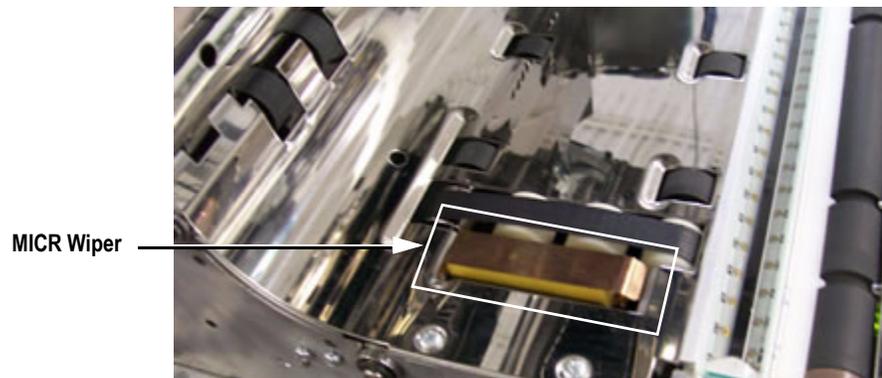


FIGURE 35: Location of the MICR Wiper

- 4 Open the MICR spring clip under the right side of the assembly and lift the wiper out of the machine. The clip can be seen in Figure 36.

NOTE: It may be difficult to perform this step just with your fingers. If so, try moving the spring clip using a small, flathead screwdriver.

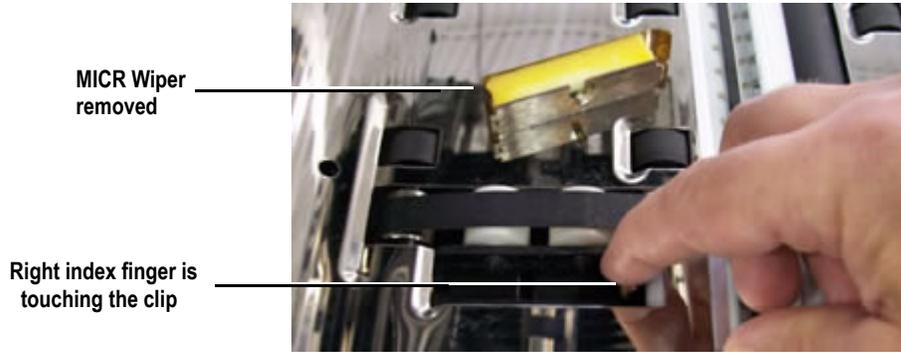


FIGURE 36: MICR Wiper removed

- 5 Examine the wiper and determine if it should be replaced.
- 6 Obtain a new MICR wiper.
- 7 Insert the back under of MICR wiper assembly beneath the back clip, lower the assembly so the bottom pin fits into the hole and press down on the front of the MICR wiper until you hear it click into place.

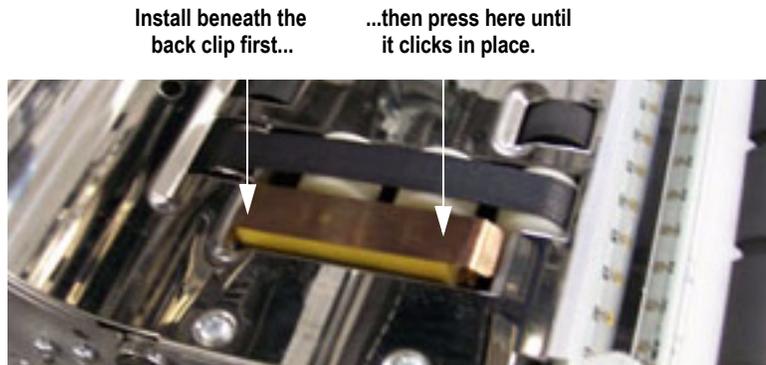


FIGURE 37: MICR Wiper installation

- 8 Lower the clamshell, press down, and squeeze the lever to latch the lid.
- 9 Run a few test checks to see if the MICR line is being detected properly.

Removing/Replacing the Feeder O-Ring

The Feeder O-Ring should be checked periodically and replaced if it appears broken, cracked or worn.

Contact OPEX Technical Support at: 1-800-673-9288 if you need to order a new feeder O-ring (part no. 7270800).

To replace the feeder O-ring

- 1 Finish any jobs that are running and power down the DS1225.
- 2 Disengage the latch securing the clamshell and lift it up (see Figure 29 on page 4-2).
- 3 Locate the feed roller assembly.

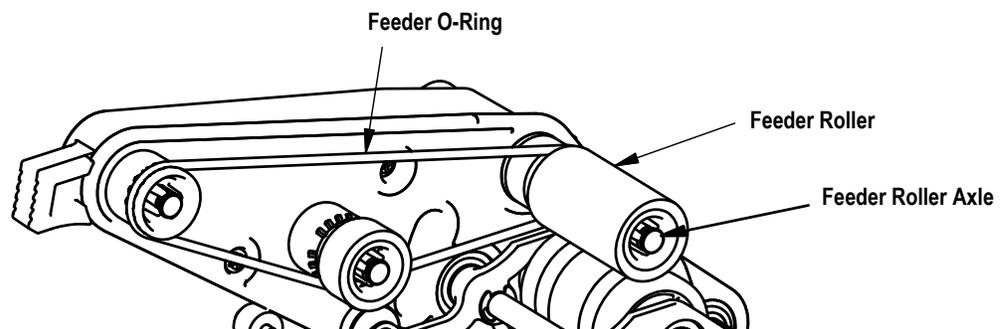


FIGURE 38: Feeder assembly O-ring location

- 4 Pull the feeder roller off the feeder roller axle (see Figure 38). Be careful not to remove the e-clip located inside the roller from the axle (see Figure 39).

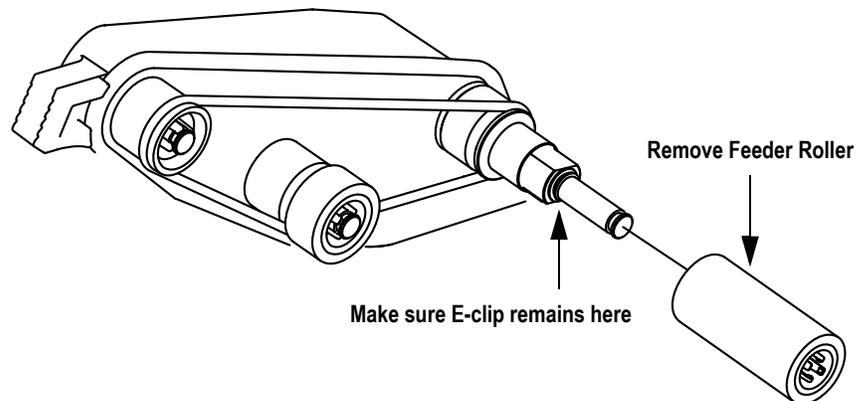


FIGURE 39: Removing the feed roller

4 Maintenance

- 5 Once the feed roller is removed, it should be very easy to slide the old O-ring off the feeder assembly.

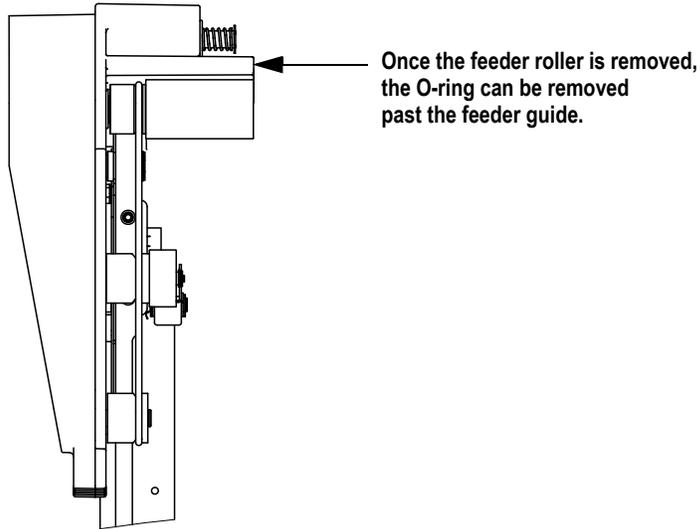


FIGURE 40: O-ring removal (Bird's eye view)

- 6 Install the new o-ring to the location shown in Figure 38 and Figure 39.
- 7 Reattach the feeder roller to the feeder roller axle. Make sure the end of the roller connects to the coupler (it may snap in place).
- 8 Lower and latch the clamshell assembly.
- 9 Power up the DS1225 and run a few test documents to make sure everything is working properly.

Cleaning

When properly maintained, the DS1225 will continue to operate efficiently and smoothly. However, over time, dust and dirt buildup can degrade the performance, resulting in problems such as skewing, double feeds, document hesitation and damage. The conveyor, stacker assembly, feed assembly and the CIS (contact image sensor) require regular cleaning.

Regular and scheduled maintenance will ensure that the DS1225 continues to function properly, with minimum downtime and maximum efficiency. This maintenance procedure consists of debris/dust removal and general cleaning.



Be careful when working with cleaners. A cleaner-soaked cloth or similar material should never be used to clean moving objects. For example, do not clean belts or rollers when the motors are running. The use of a cloth or a similar material on moving mechanisms can result in severe personal injury. If a belt, roller, pulley, or a similar part needs to be cleaned, hand-crank it during cleaning or clean it while stationary.

Cleaning the machine

- 1 Turn off the scanner and disconnect the power cord.
- 2 Using a mild soap or detergent on a lint-free cloth, wipe the DS1225 clean.
- 3 Follow by wiping off the DS1225 with a clean, dry cloth.

Cleaning the contact image sensor

The glass should be cleaned at the beginning or end of each shift, or as needed. If the user sees lines appearing on the image previewed on the screen, then it is likely there is a speck (toner, white out, paper, glue, etc.) attached to the glass obstructing the view. Open the clamshell to access the contact image sensor and wipe the glass clean. Be sure to clean the top camera glass if the line appears on the front side of the image.

Cleaning the ink jet printer nozzle

Ink that collects around the printer cartridge may cause blotches or distort the printed text. Clean the ink cartridges periodically using OPEX swabs (#1999300).

Refer to “Removing/Replacing the Printer Cartridge” on page 4-2 for instructions on how to access the printer cartridge(s). The optional full diagnostics tool also allows you to clean the nozzle by shooting a small amount of ink out of the nozzle. For more information, see “Printers” on page 5-28.

Cleaning the feed rollers

Black lines on the image can be caused by dirt (toner, ink, white out, glue, etc.) transferred from the paper to the rollers and feeder. When necessary, clean the rollers with **ONLY** isopropyl alcohol.

4 Maintenance

Troubleshooting

Chapter
5

Standard Diagnostics 5-1

 Version 5-2

 QC Test 5-3

 Calibration 5-12

 Licensing 5-17

 Misc. 5-21

 Printers 5-22

Full Diagnostics Tool 5-23

 Gates 5-24

 Motors 5-25

 Sensors 5-26

 Lights 5-27

 Printers 5-28

 MICR 5-29

 Imagers 5-30

 Loopback 5-31

 Burn In 5-32

Scanner Jams 5-33

Troubleshooting 5-37

Standard Diagnostics

Standard diagnostics are provided with the DS1225, and can be used to troubleshoot basic problems. The advanced full diagnostics tool is a purchasable option and is described on page 5-23. A software options key from OPEX Technical Support is required to unlock the full version.

NOTE: TWAIN applications can't be opened or function when running Diagnostics.

To access the standard diagnostics

- 1 For a first-time install, insert the Installation CD into the CD/DVD drive on the computer and follow the on-screen instructions for installing the diagnostics tool.
- 2 Once installed, the software will create two icons on the desktop:

One for opening the
OPEX Capture
Application...

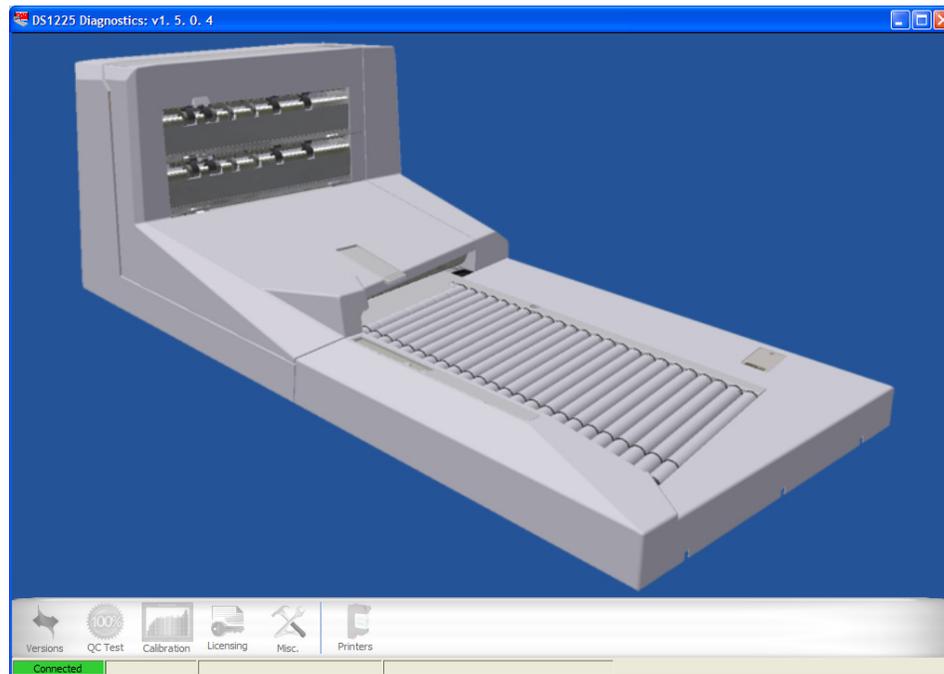


...and the other
for accessing
diagnostics.



- 3 Click the **Diagnostics** icon on the desktop.

When you first access the standard diagnostics, the following screen appears:



The standard diagnostics tool offers the following sections: Version, QC Test, Calibration, Licensing, Misc. and Printers. You access each of these sections by clicking their respective icons.

The green bar in the bottom tool bar indicates a proper connection between the DS1225 and your computer. If it appears red, verify that the USB cable is connected to both components and working properly.

Version

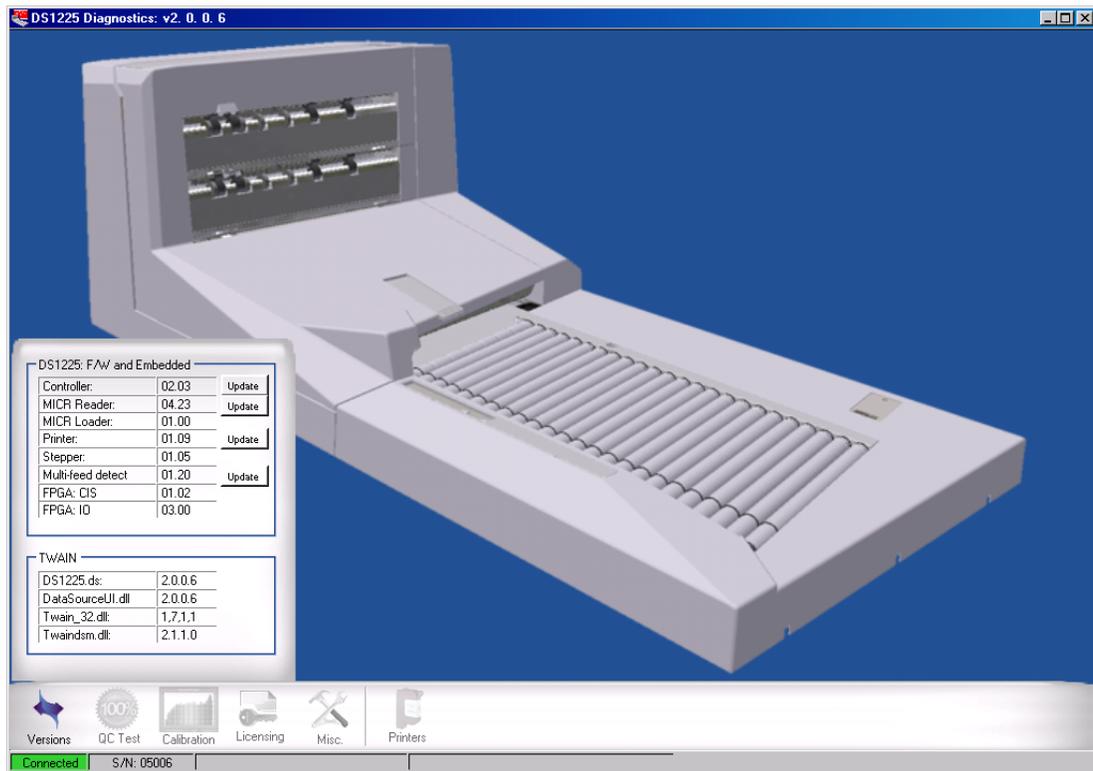


FIGURE 41: Standard Diagnostics - Versions

Clicking the **Versions** icon allows you to see the current software versions of your system. Should you need to contact OPEX Customer Support, knowing this information in advance can be very helpful.

The Controller and MICR Reader both have an **Update** button. You can click on the **Update** button to upgrade software versions. Pressing it will bring up a load file box that will allow you to browse to the new file to load. After pressing the **Open** button, select file to open, you will be prompted to put the Controller or MICR Reader into program mode. After pressing **OK**, the scanner will take approximately 60 seconds to load the new file before saying the load was successful. You will then be prompted to put the Controller or MICR Reader back into run mode.

NOTE: There may be other **Update** buttons based on software versions, system functionality, and purchased options.

QC Test

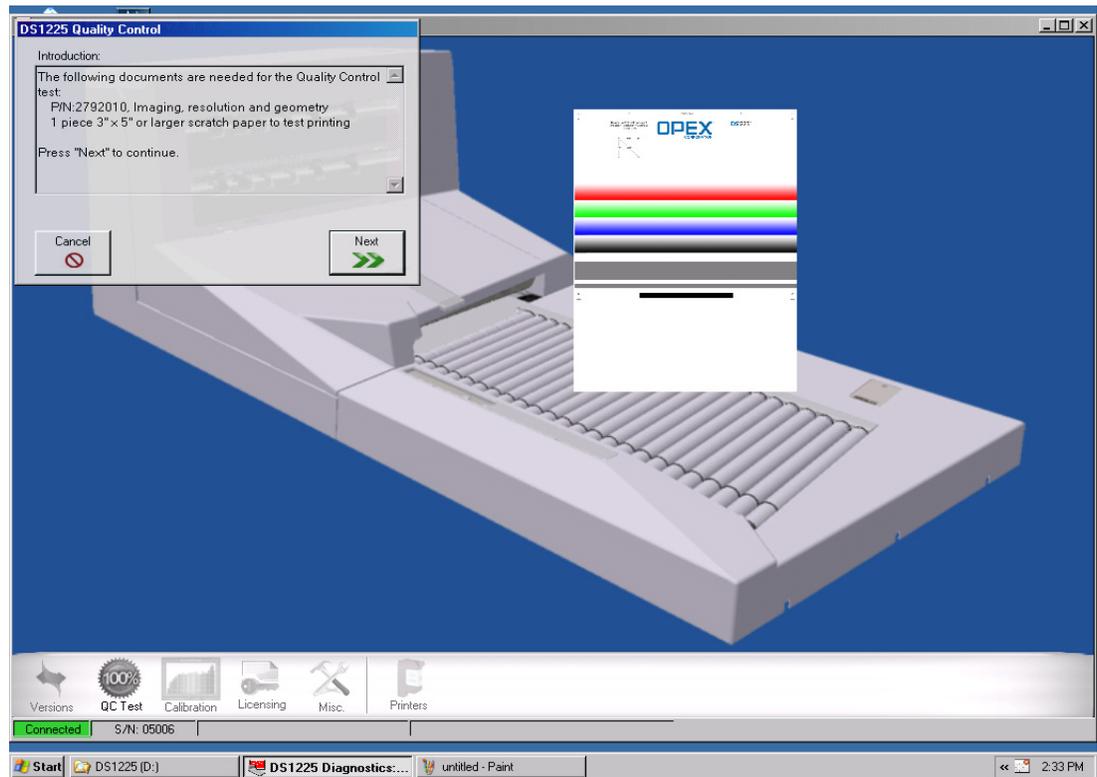


FIGURE 42: Standard Diagnostics - QC Test main screen

Clicking the **QC Test** icon will display the DS1225 Quality Control Wizard. Text on the screen will guide you through each of the tests.

You will need the imaging test document (part number 2792010) and a piece of standard, 8½ x 11 copy paper to perform the QC Test.

Press the **Next** button to begin.

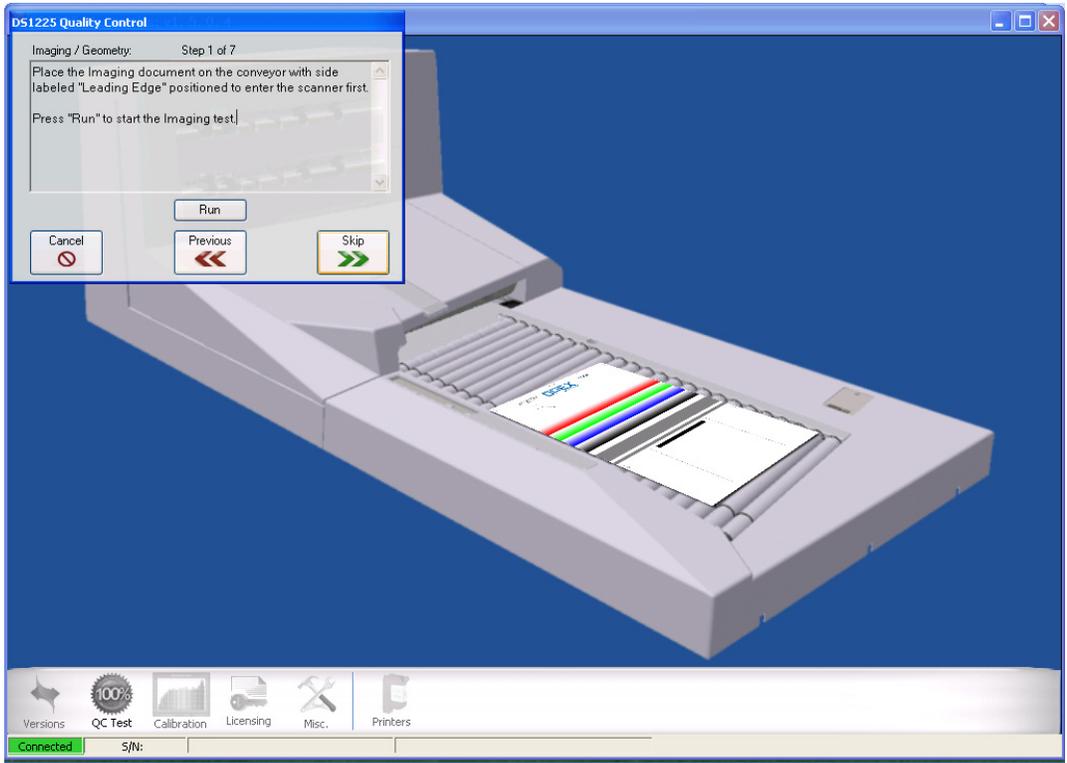


FIGURE 43: Standard Diagnostics - QC Test

NOTE: Before running the Imager Test, verify both imagers are clean from any debris.

Place the imaging test document (part number #2792010) on the conveyor with the side labeled “Leading edge” positioned to enter the scanner first (as shown in Figure 43).

Click **Run** to scan the document. After clicking **Run**, the DS1225 scans the document and processes the data. The window will display:

Scanning...

Transferring image...

Transferring image...

Analyzing top image... (then the test repeats for Bottom Imager)

NOTE: If the **Misc. > Dump QC Image Analysis images** checkbox is checked, the front and back images of the Resolution Chart are stored in **C:\Windows\Twain_32\DS1225\Diagnostics**.

Other tests are performed in this procedure, as described below.

Skew and Geometry

Angles:

- A -> B: 89.89 degrees, passed.
- D -> C: 89.90 degrees, passed.
- A -> D: 0.10 degrees, passed.
- B -> C: 0.37 degrees, passed.

Pass Analysis: Image angles were calculated and found within tolerance.

Fail Analysis: If “fail” occurs:

- Confirm the document enters the feeder unskewed and doesn't kick out
- Confirm that there is no binding on any of the rollers (bushings move freely)

Distances

- A -> B: 15.28 inches, passed.
- D -> C: 15.37 inches, passed.
- A -> D: 11.47 inches, passed.
- B -> C: 11.47 inches, passed.
- A -> C: 19.14 inches, passed.
- D -> B: 19.14 inches, passed.

Pass Analysis: Distances were calculated and found within tolerance.

Fail Analysis: If “fail” occurs:

- Confirm that there is no binding in the transport area

Resolution

Vertical

Score: 279 passed.

Pass Analysis: The vertical resolution requires a score of 220 to pass.

Fail Analysis:

- Confirm the motors are at the correct speed
- Confirm document is not skewed

Motor Speeds

Conveyor Motor(21.04) passed (should be 21ips \pm .5).

Transport Motor(24.14) passed (should be 24ips \pm .5).

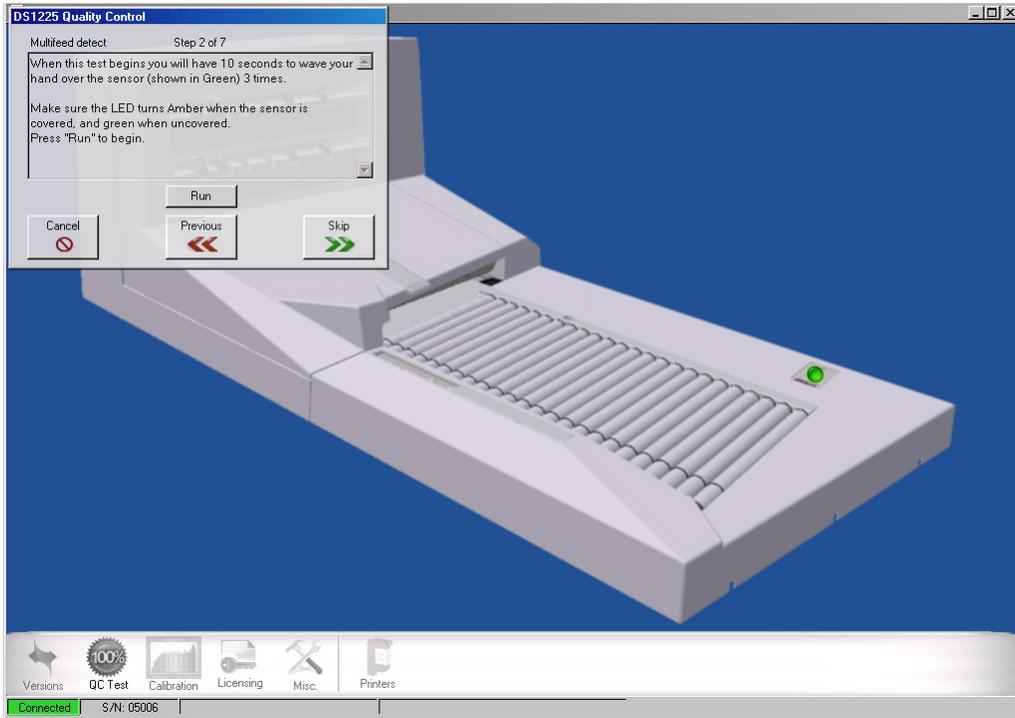


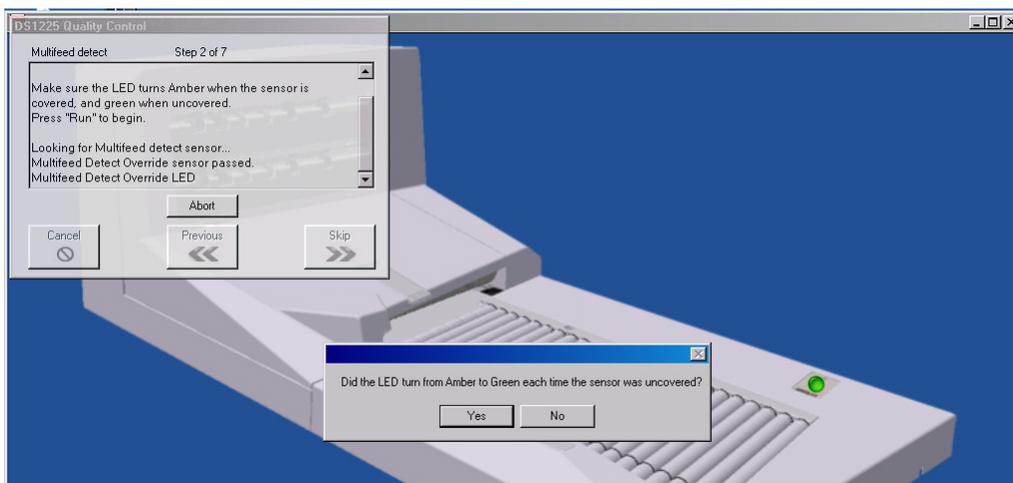
FIGURE 44: Standard Diagnostics - QC Test

Multifeed detect test

When this test begins, you have 10 seconds to wave your hand over the multifeed detect sensor (shown in green) three times.

Make sure the LED turns amber when the sensor is covered, and green when it is uncovered.

Click **Run** to begin the test, or click **Skip** to continue. If you clicked **Run**, the following confirmation screen should appear. Click **Yes** or **No** to continue.



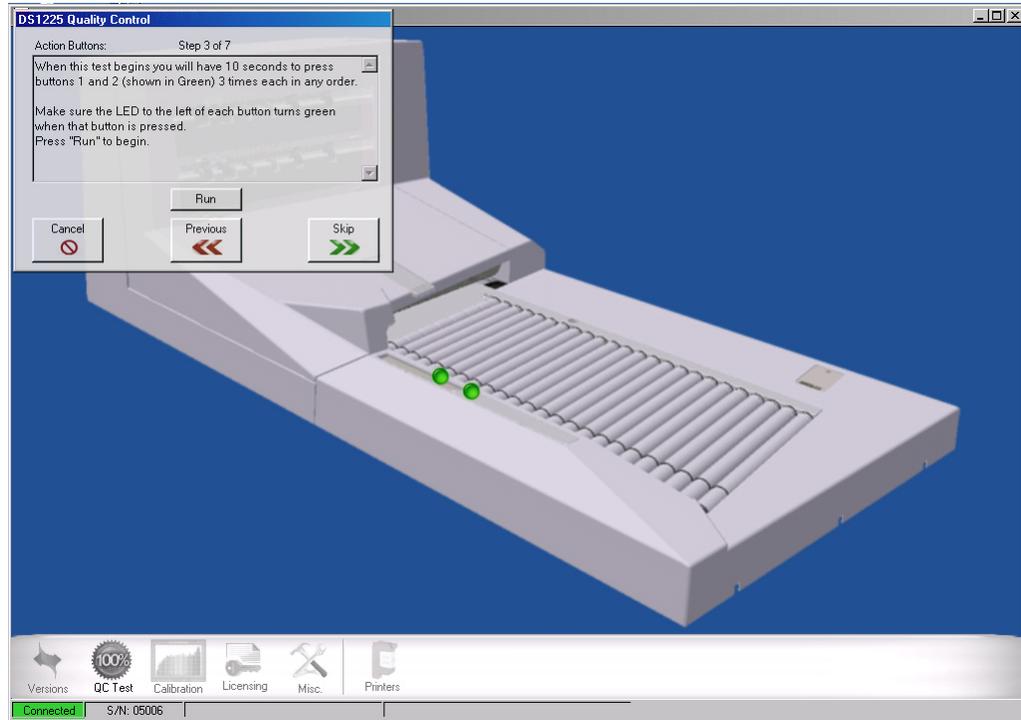


FIGURE 45: Standard Diagnostics - QC Test

Action buttons test

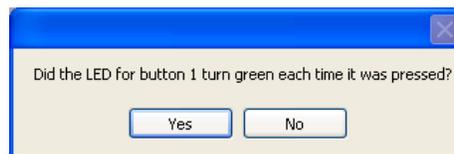
When this test begins, you have 10 seconds to press buttons 1 and 2 (shown in green) three times each in any order.

Make sure the LEDs turn green when the buttons are pressed.

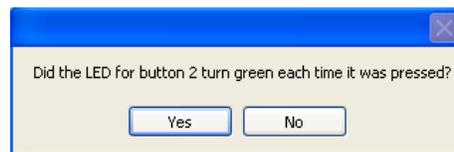
Click **Run** to begin the test, or click **Skip** to continue.

If you clicked **Run**, the following confirmation pop-up windows appear:

First this...



...then this



Click **Yes** or **No** for each window to continue.

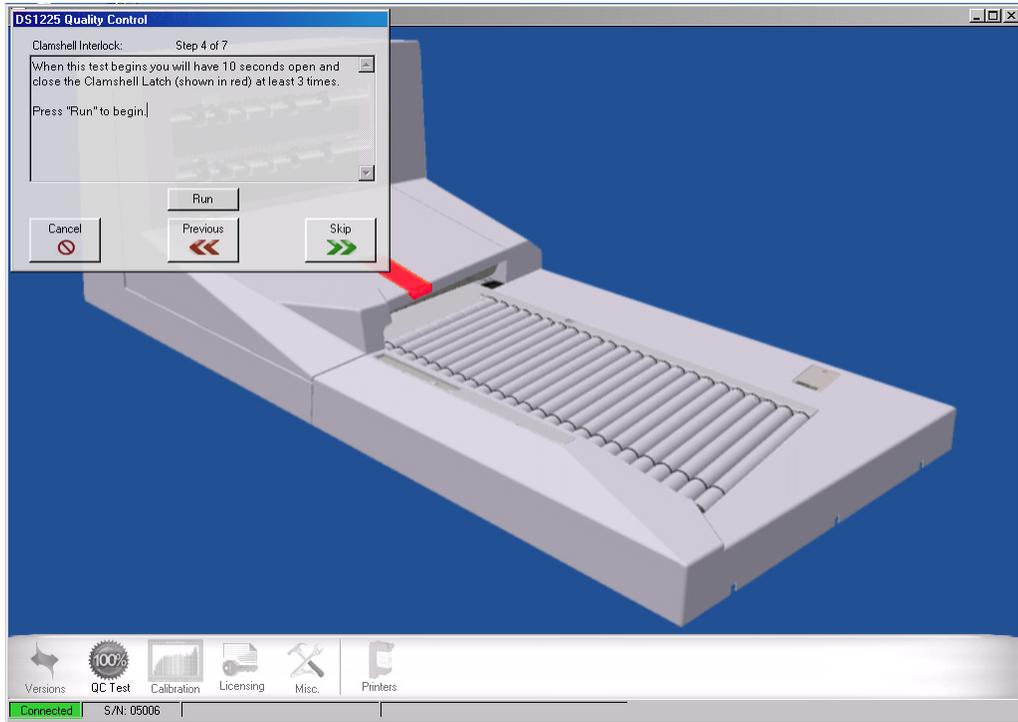


FIGURE 46: Standard Diagnostics - QC Test

Clamshell interlock test

When this test begins, you have 10 seconds to open and close the clamshell latch (shown in red) at least three times.

Click **Run** to begin the test, or click **Skip** to continue.

If you clicked **Run**, you will be presented with a confirmation screen. Click **Yes** or **No** to continue.

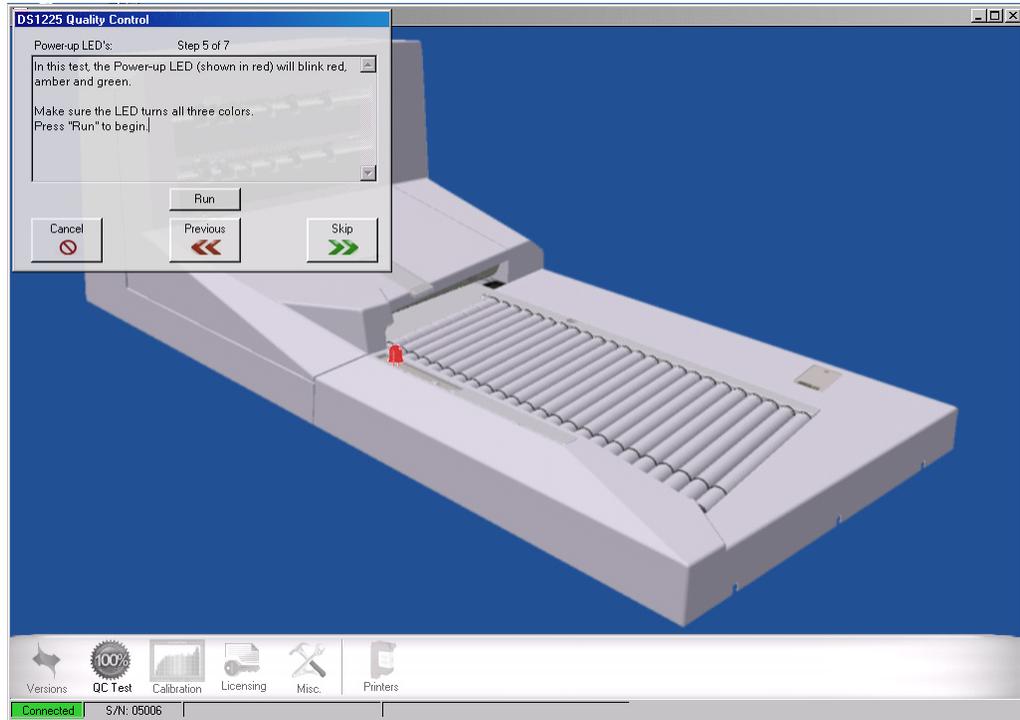


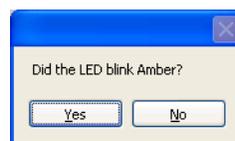
FIGURE 47: Standard Diagnostics - QC Test

Power-up LED test

In this test, the Power-up LED (shown in red) will blink red, amber and green. Make sure the LED turns all three colors.

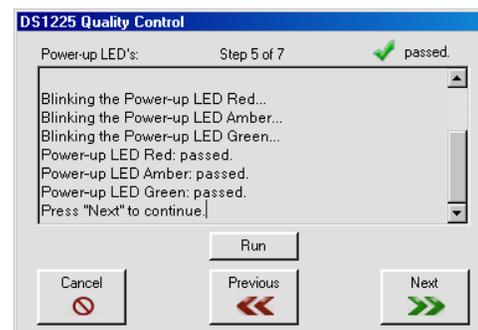
Click **Run** to begin the test, or click **Skip** to continue.

If you clicked **Run**, watch the power-up LEDs and answer the following pop-up confirmation screens:



If you clicked Yes to the above screens, the QC Test window shows the following:

Click Next to continue.



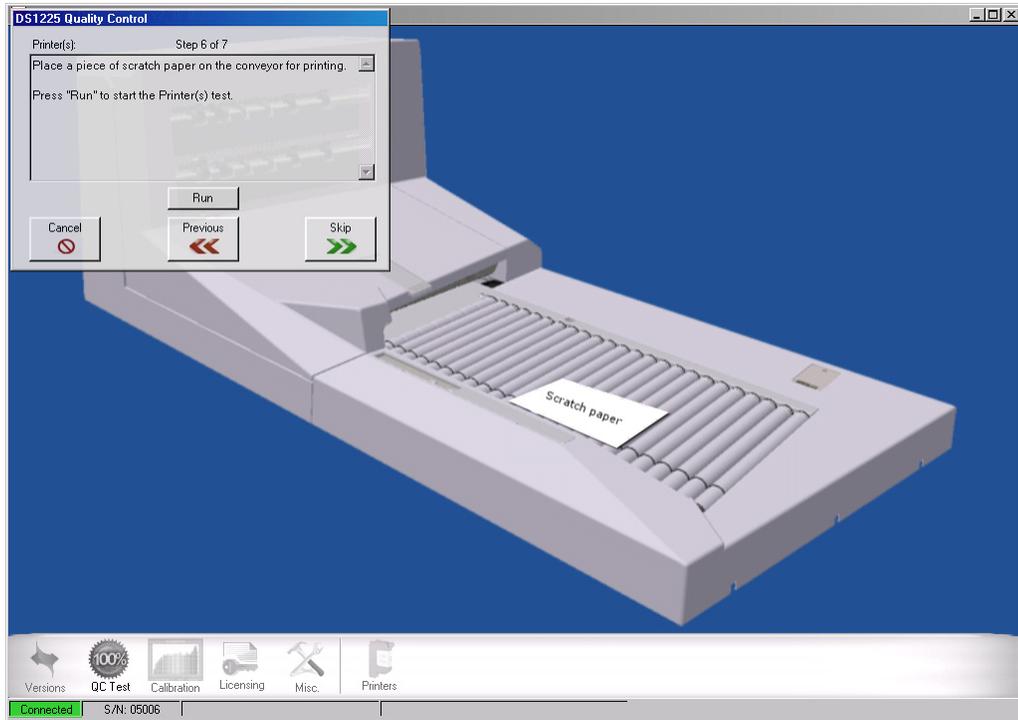


FIGURE 48: Diagnostics - Printer(s) Test

Place a blank piece of paper on the conveyor for printing.

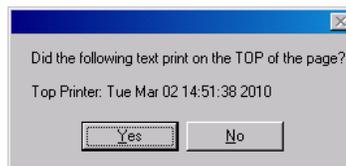
Click **Run** to start the Printers test, or click **Skip** to continue.

If you clicked **Run**, the following text appears:

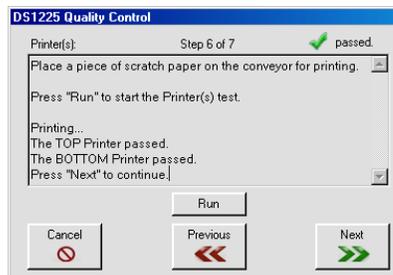
The TOP Printer passed.

The BOTTOM Printer passed.

Then the confirmations appear:



Clicking **Yes** will display the following:



Pass Analysis: Date and time were printed legibly on the top and bottom of the document

Failure Analysis: Doesn't Print or Print Distorted:

- Confirm the cartridge is loaded in the carriage properly
- Confirm the printer cartridge is not empty
- Confirm the printer cartridge head is not clogged

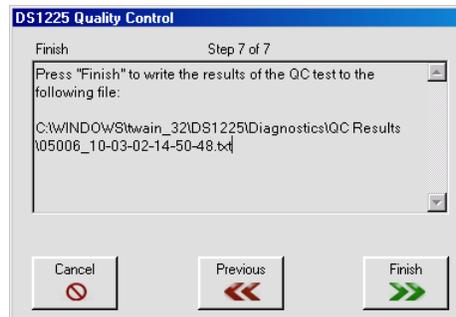


FIGURE 49: Diagnostics - write results

Press **Finish** to write the results of this test to the host computer. The actual location and file name will be displayed on the pop-up screen.

Calibration

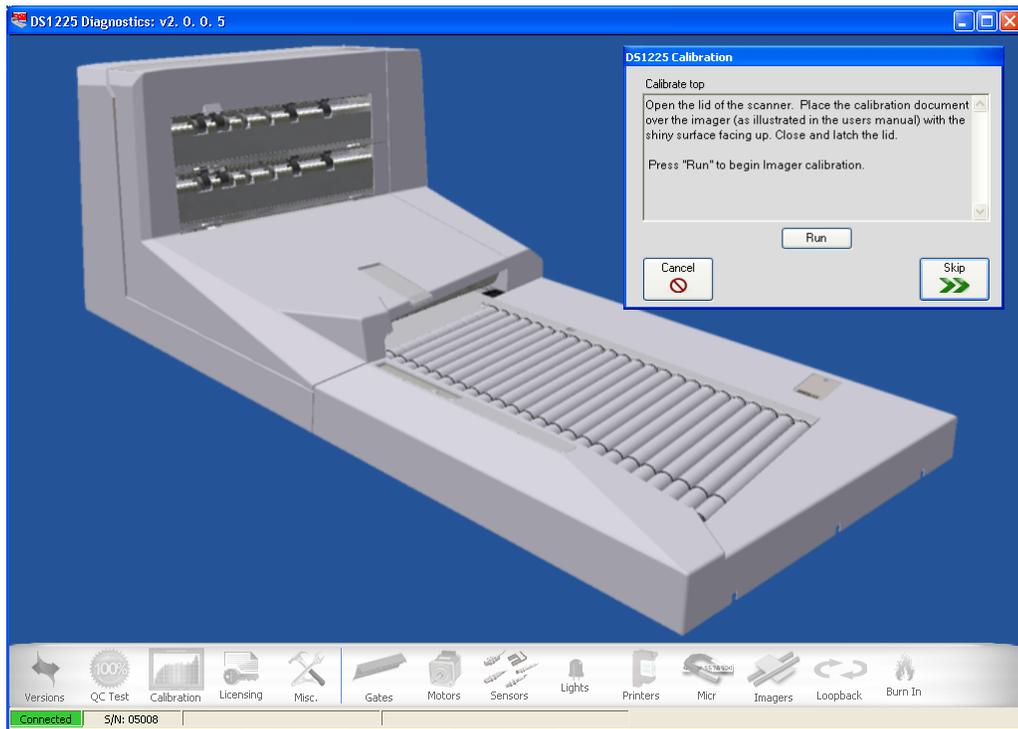
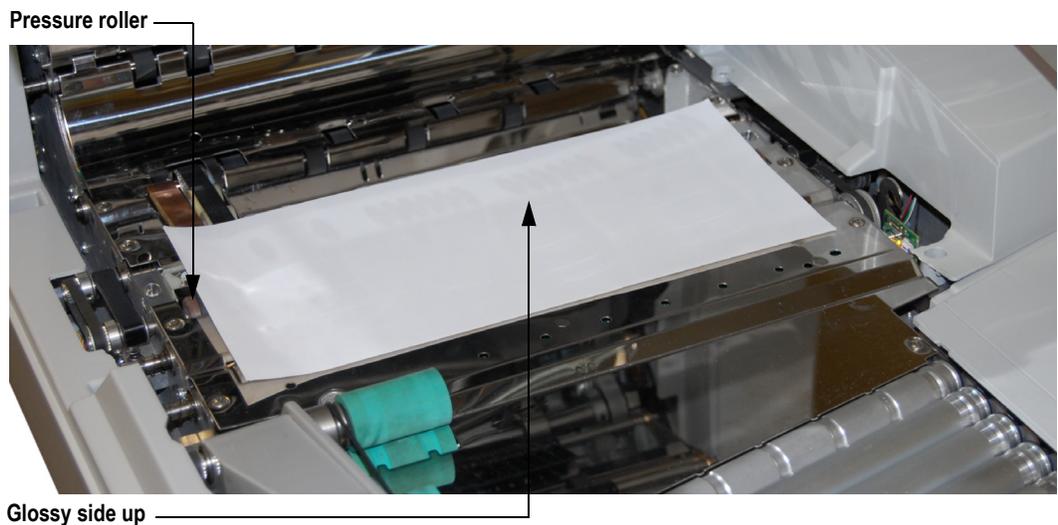


FIGURE 50: Standard Diagnostics - Calibration Wizard

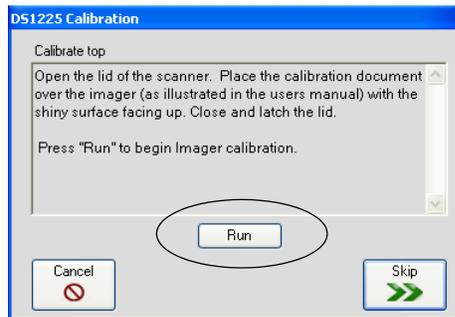
Select the **Calibration** icon to open the DS1225 Calibration Wizard. You will need:

- the glossy, 5½” x 13” calibration document (part number 2792050)
- the imaging test document (part number 2792010)
- a fresh, clean sheet of letter-sized (8½” x 11”) copy paper

- 1 Open the clamshell lid and place the calibration document. The glossy side of the calibration document should be facing up to calibrate the top scanner first. Center the calibration document on the CIS pressure roller as shown below.



- 2 Close and latch the scanner lid.
- 3 Click the **Run** button in the Calibration wizard to calibrate the top CIS.



NOTE: If you did not place the calibration document correctly, the following screen will appear. Reposition the document and click **Run** to try again.

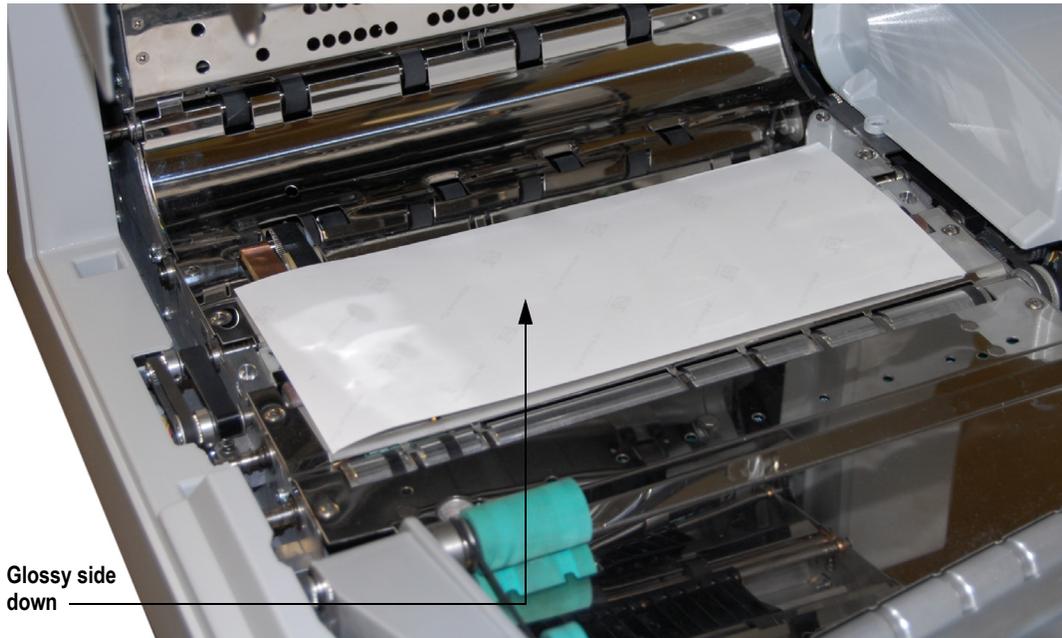


- 4 When the calibration process is finished, Click **Next** to calibrate the bottom imager.

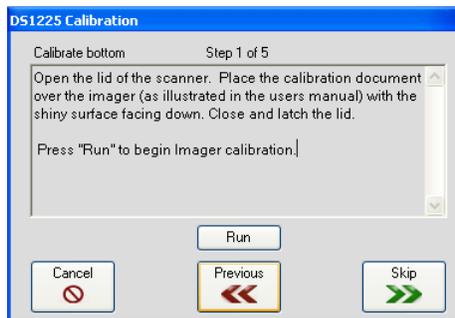


5 Troubleshooting

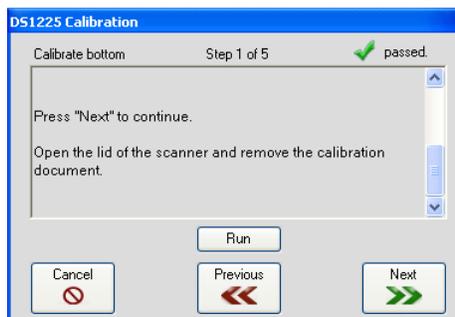
- 5 Open the clamshell and turn the calibration paper upside down. The glossy side should be face down to calibrate the bottom imager.



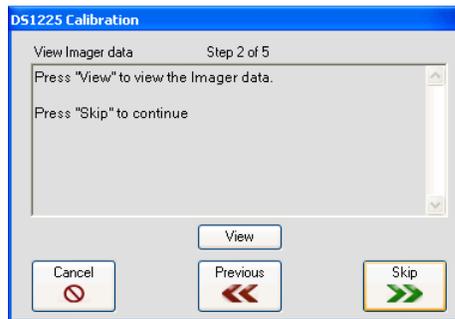
- 6 Click **Run** to calibrate the bottom imager. Follow the on-screen instructions.



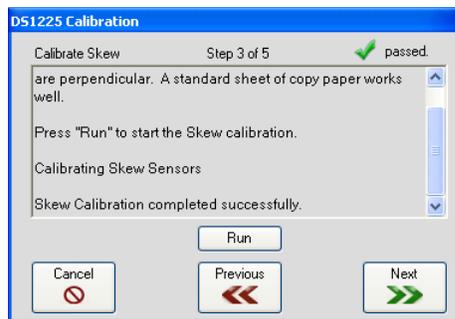
- 7 When the calibration is complete, open the clamshell and remove the calibration document, then click **Next**.



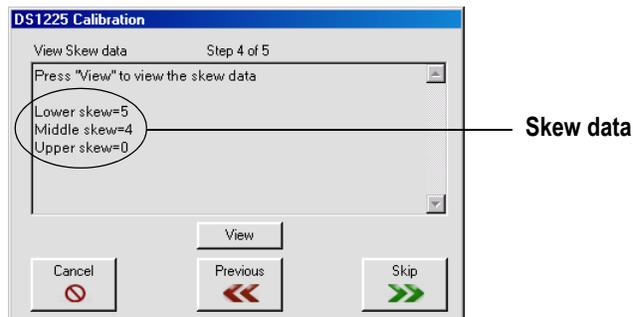
- 8 Click **View** to view the imager data, or **Skip** to move to the next step.



- 9 Place the clean piece of standard copy paper on the conveyor and Click **Run** to calibrate the skew sensors. The scanner will send the paper through.

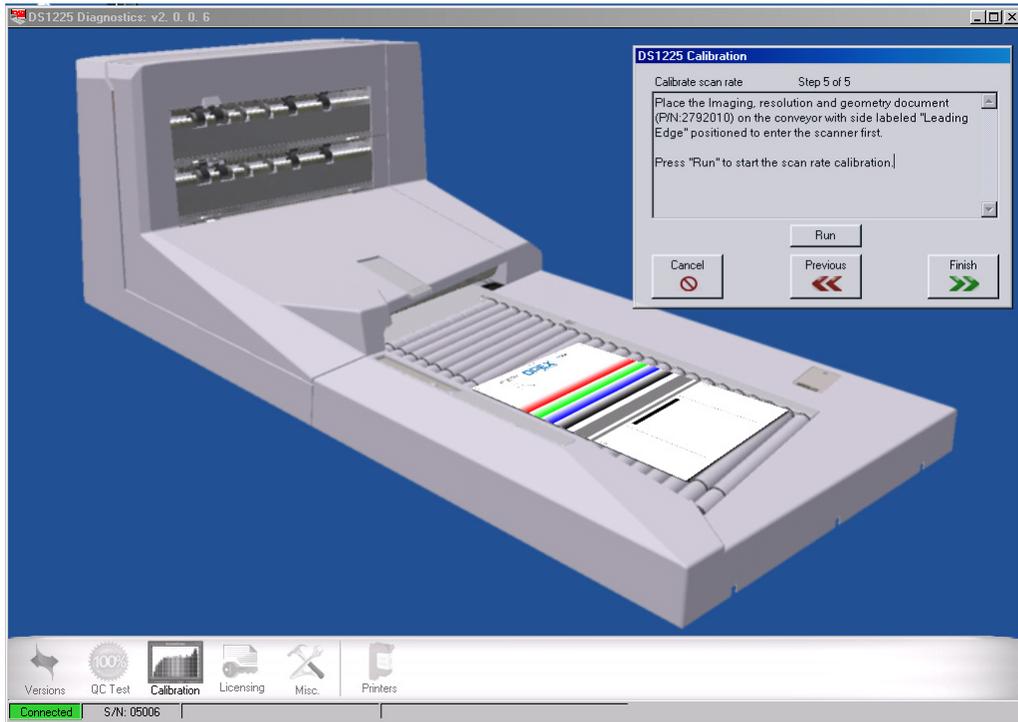


- 10 Click **View** to take a look at the skew data, or **Skip** to proceed.

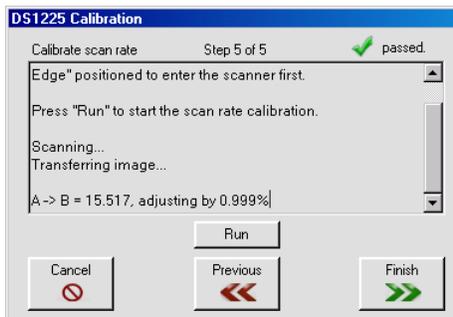


5 Troubleshooting

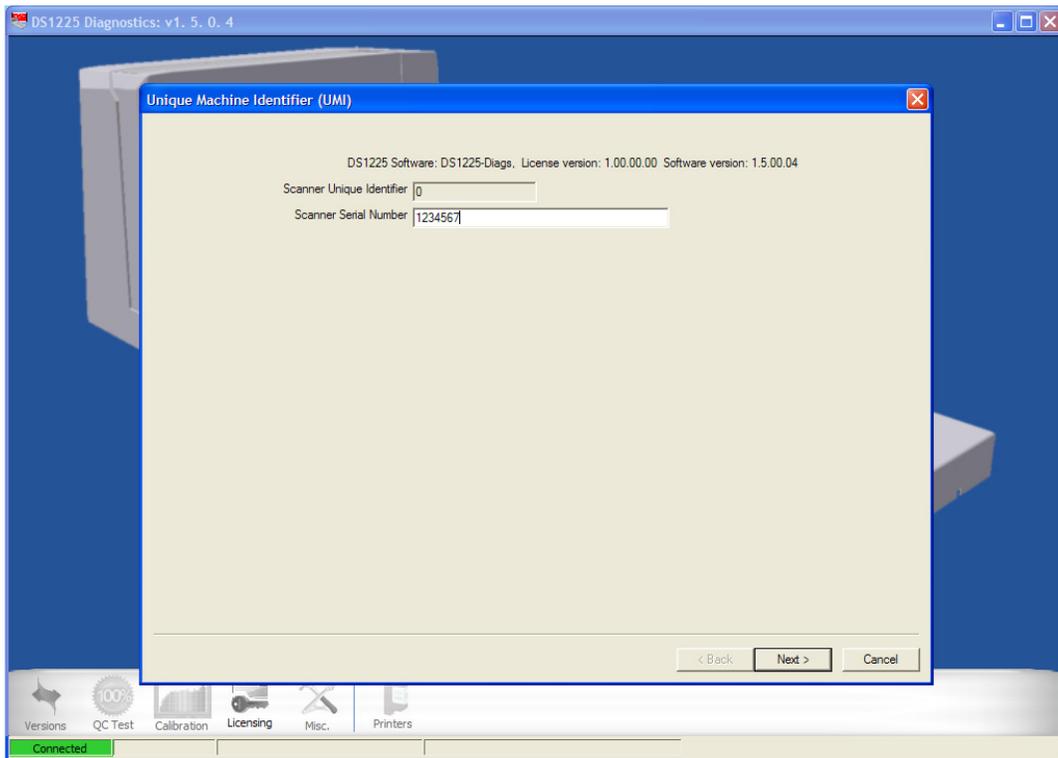
- 11 Calibrate the scan rate. Place the imaging test document on the scanner as shown (leading edge first), then click the **Run** button.



- 12 Click the **Finish** button to complete the calibration procedure.



Licensing



The DS1225 is equipped with OPEX’s Software Options Lock System (SOLS). This system has been developed to give OPEX control over the software and hardware options activated on machines. The system locks the software and hardware options such that the user or service technician cannot just change software options without proper authorization. The service technician must call OPEX Technical Support to make any changes to the options.

The following information is required to be able to change or set options for the software via SOLS:

- Unique Machine Identifier (UMI) - click the **Licensing** icon to display the Unique Machine Identifier (UMI) window. The Unique Machine Identifier can be found in the first screen.
- Machine Serial Number (MSN) - also displayed on the UMI window.
- The options and their values - selected on the following screen (after clicking **Next**).
- Option Activation Key (OAK) - generated by technical support and must be entered later in the Licensing section to active the selected options.

Click **Next** to continue.

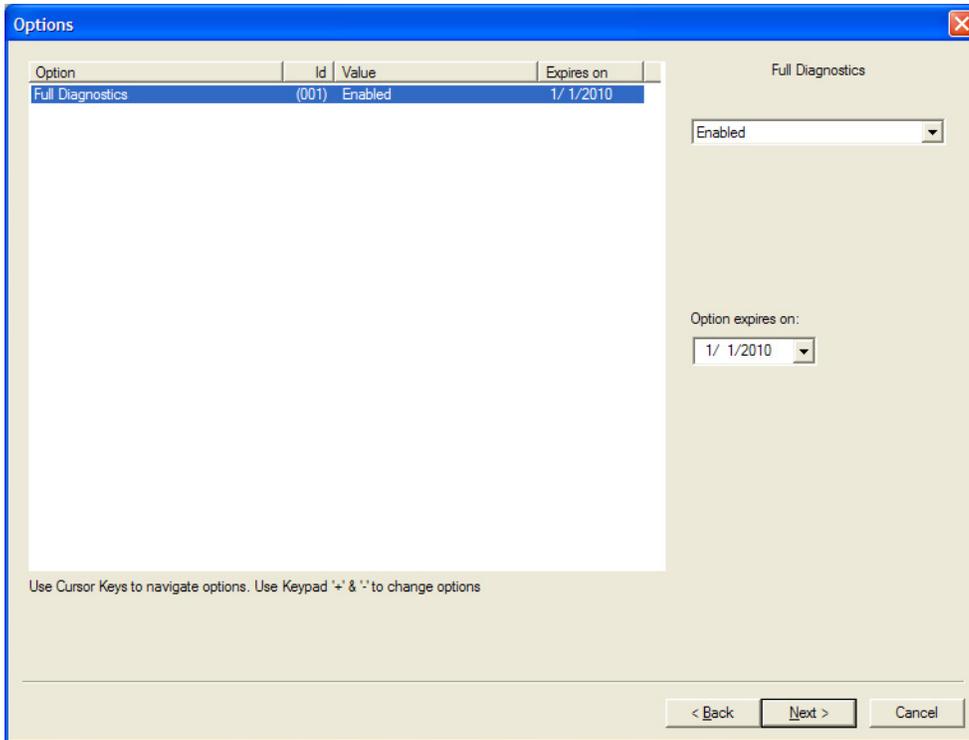


FIGURE 51: DS1225 Software Options

The Options screen shows the Full Diagnostics option with the current value and expiration date. Click the down arrow to select between **Disabled** and **Enabled** as shown in Figure 51.

The **Option expires on** date is based on the last day of the service contract. As that date approaches, pop-up reminders will appear informing you that your service contract is about to end. Contact OPEX Technical Support if you wish to keep Full Diagnostics enabled.

When the correct values are selected, click **Next**.

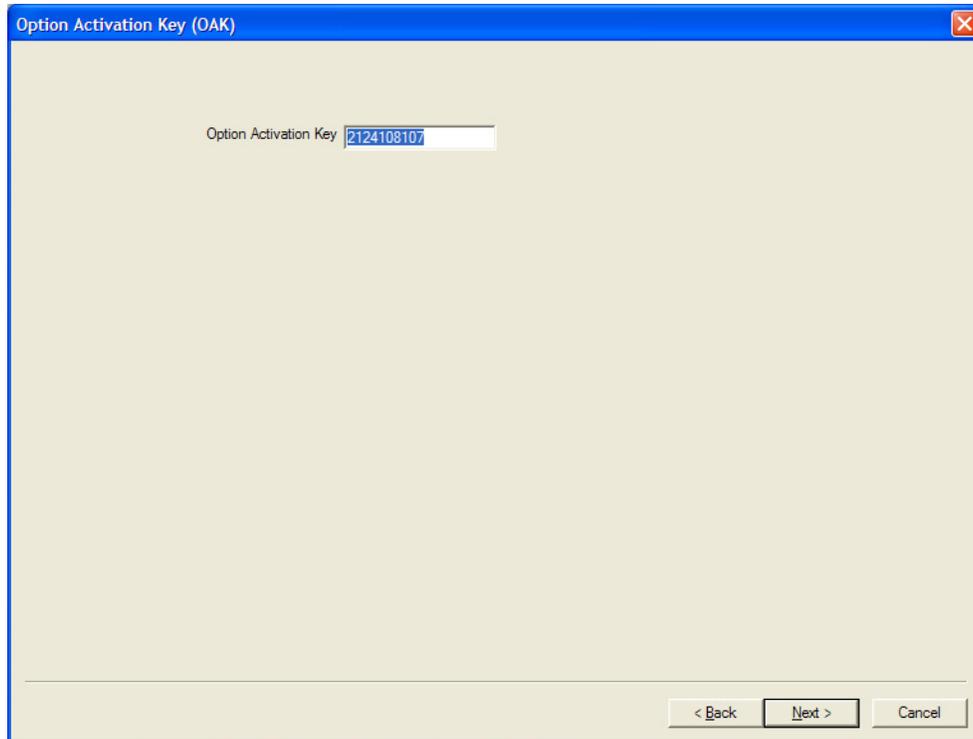


FIGURE 52: DS1225 Licensing - Option Activation Key

The Option Activation Key is acquired from OPEX Technical Support once you have provided the UMI, MSN, and the value of each option after changes.

Click **Next** after entering the Option Activation Key.

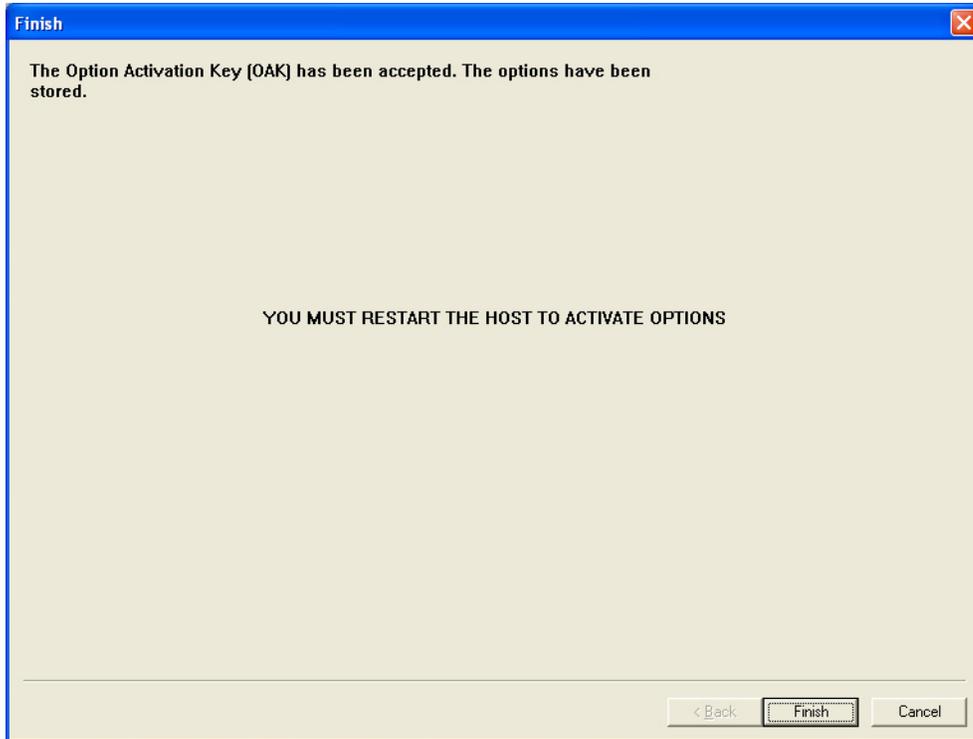


FIGURE 53: DS1225 Licensing - confirmation screen

- If successful, the display will show: The options have been stored YOU MUST RESTART THE HOST TO ACTIVATE OPTIONS.
- If unsuccessful, contact OPEX Technical Support.

Click **Finish** to exit the Software Options window.

Misc.

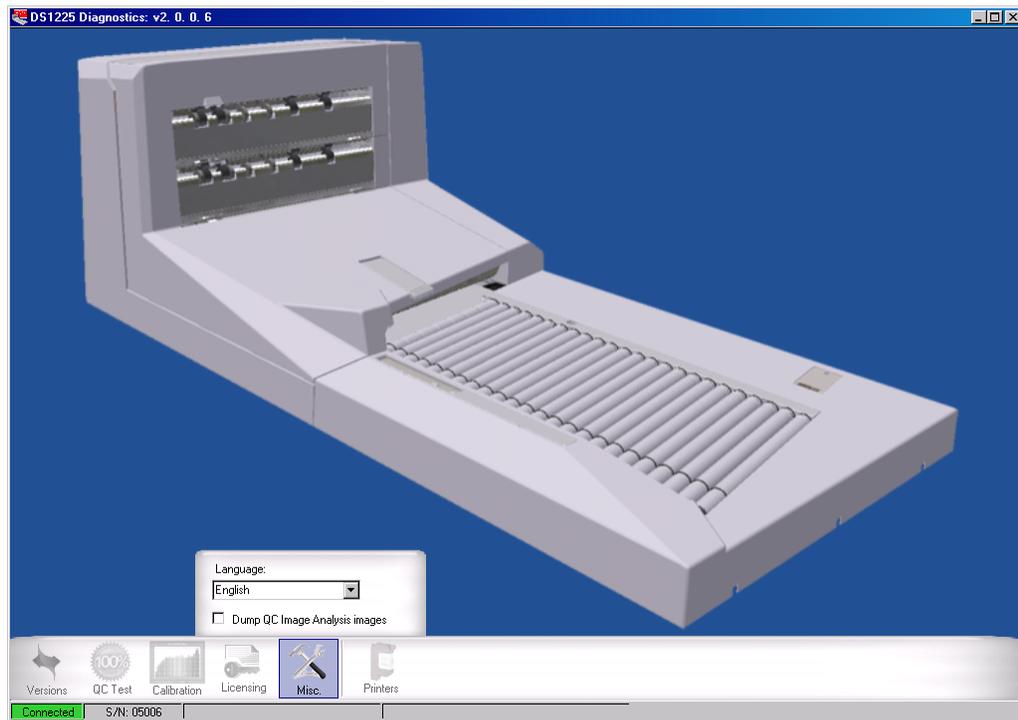


FIGURE 54: Standard Diagnostics - Misc. main screen

Language

The software is capable of supporting the following languages:

- English (english.txt)
- French (french.txt)
- Spanish (spanish.txt)
- German (german.txt)
- Dutch (dutch.txt)
- Italian (italian.txt)

Each language is supported via a text file in `WindowsDir\twain_32\DS1225\language.txt`. Any `language.txt` file that is in this directory will be listed. Currently, only English is available.

To generate additional languages, copy the `english.txt` and save as one of the `language.txt` files listed above. Then translate the lines in the file. The order of the lines must be maintained, as well as any special formatting characters that might be present.

Printers

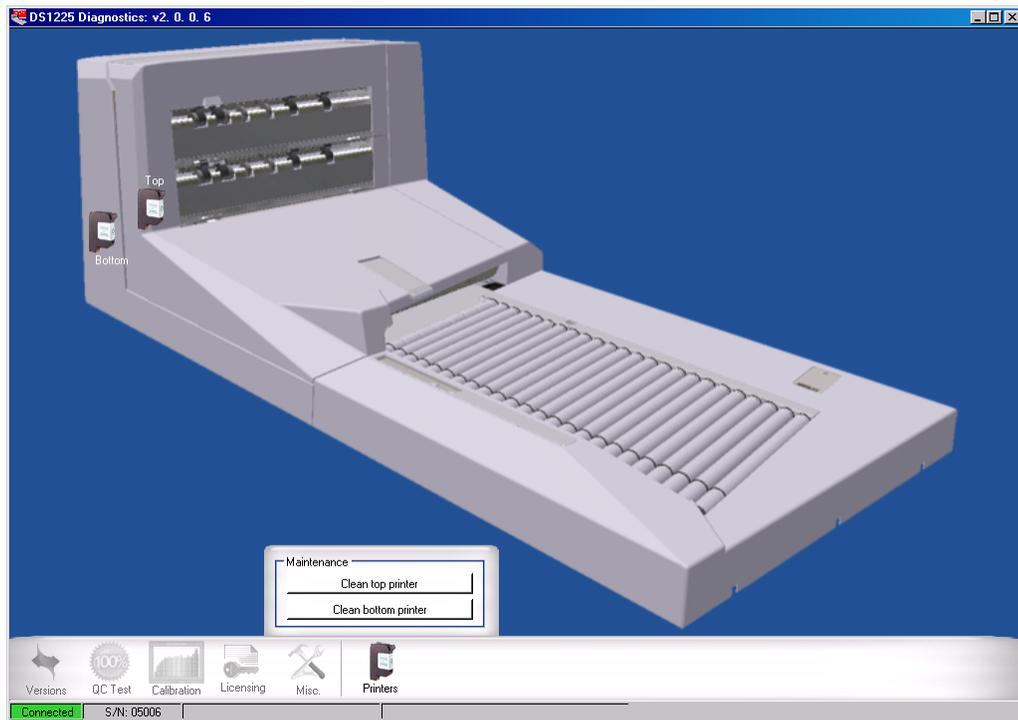


FIGURE 55: Standard Diagnostics - Printers

Clicking on the **Printers** icon will display the above screen. The system has a bottom printer (standard) and a top printer (optional). This maintenance screen will allow you to clean the printers.

To clean the printers

- 1 Open the clamshell and place a piece of paper in the printer area (as identified in Figure 55).
- 2 Close the clamshell.
- 3 Press the **clean bottom printer** button.
- 4 Open the clamshell and examine the paper.
- 5 If you do not see an ink spot on the paper, clean the ink head with a swab and repeat steps 1 through 4.
- 6 If there is still no ink spot on the paper, check to see if the cartridge is empty, and replace if needed (replacing the cartridge is described in the Printer Chapter of this manual).
- 7 If the optional top printer is installed, repeat the above steps for the top printer.

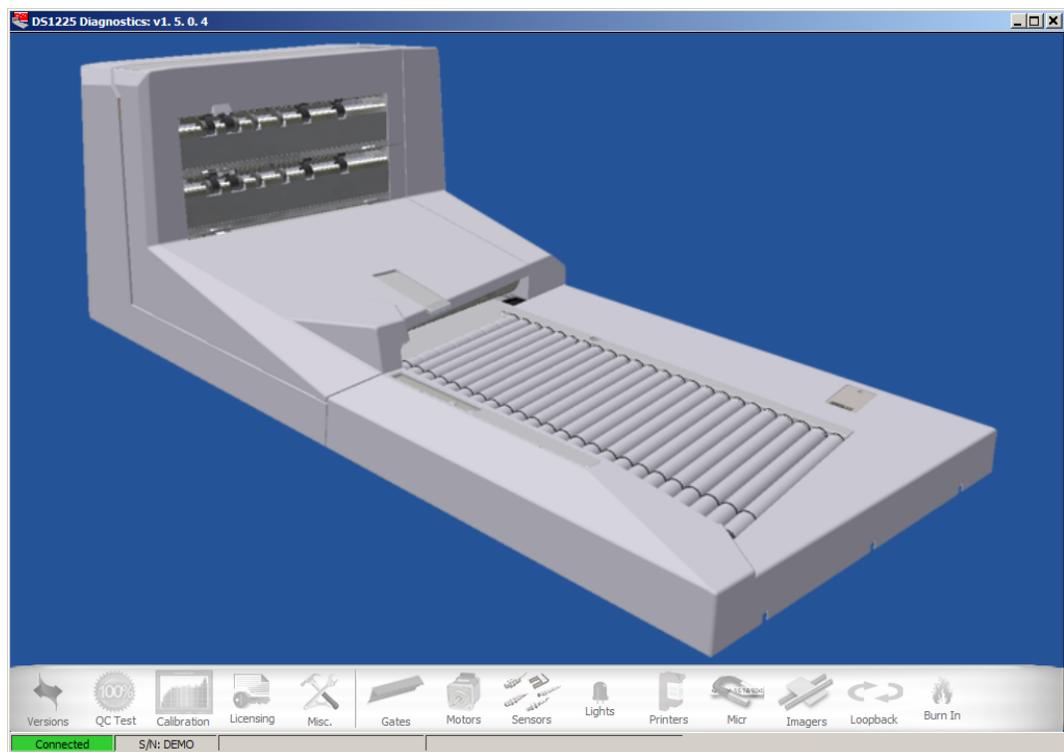
Full Diagnostics Tool

The full diagnostics tool is a purchasable option. It allows you to perform various tests of the system to troubleshoot problems. The standard diagnostics tool is described on page 5-1.

NOTE: TWAIN applications cannot run at the same time as Diagnostics.

To enable and access the full diagnostics

- 1 For a first-time install, insert the Installation CD into the CD/DVD drive on the computer.
- 2 Follow on-screen instructions for installing the diagnostics tool.
- 3 Once installed, click the **Diagnostics** icon on the desktop. This will enable the Standard Diagnostics tool (as described on page 5-1).
- 4 Click the **Licensing** button.
- 5 Follow the steps described in page 5-17 to enable the Full Diagnostics Tool. When you first access the full diagnostics, the following screen appears:



Each of the buttons on this screen and their functionality will be described on the following pages.

NOTE: The **Version**, **QC Test**, **Calibration**, **Licensing** and **Misc.** functions operate the same as the related functions in the standard diagnostics. For these functions, see the “Standard Diagnostics” section, beginning on page 5-1.

Gates

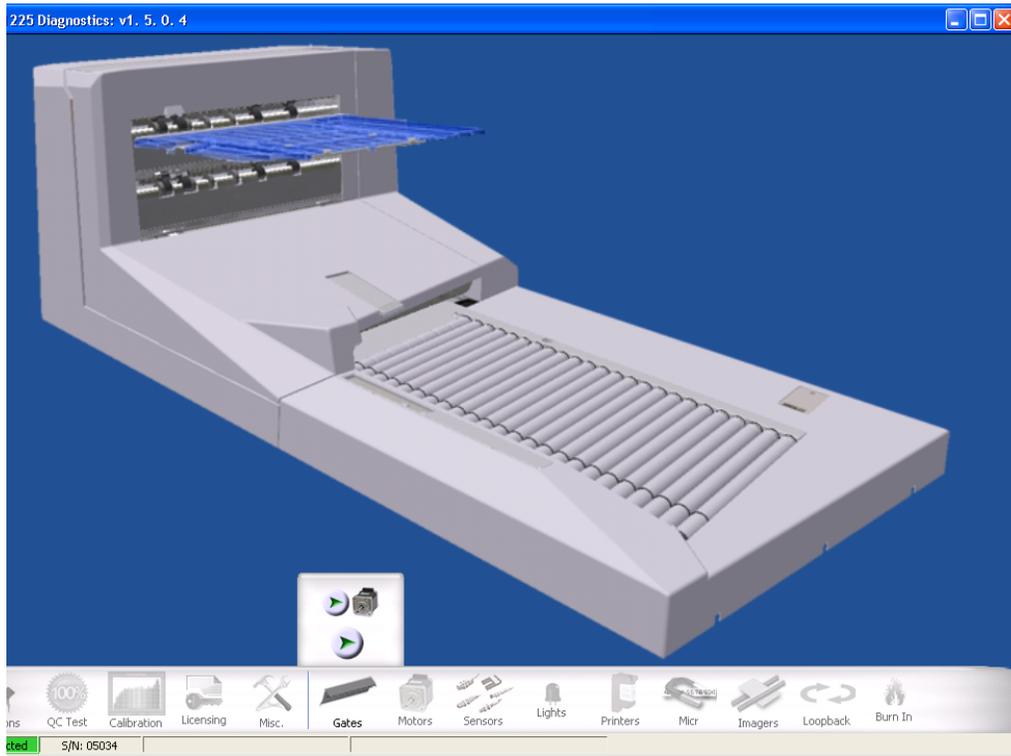


FIGURE 56: Full Diagnostics - Gates

When you click the **Gates** icon, the above screen appears. The DS1225 has one solenoid and gate, which allows a document to be placed in either of two trays.

To confirm that the gate and motor are working properly:

- 1 Click on the top green arrow to enable the motor.
- 2 With the motor running, send a piece through. It should fall into the top tray.
- 3 Click on the bottom green arrow to activate the gate.
- 4 With the motor running, send a piece through. It should fall into the bottom tray.
- 5 Click the top red square to disable the motor.

Motors

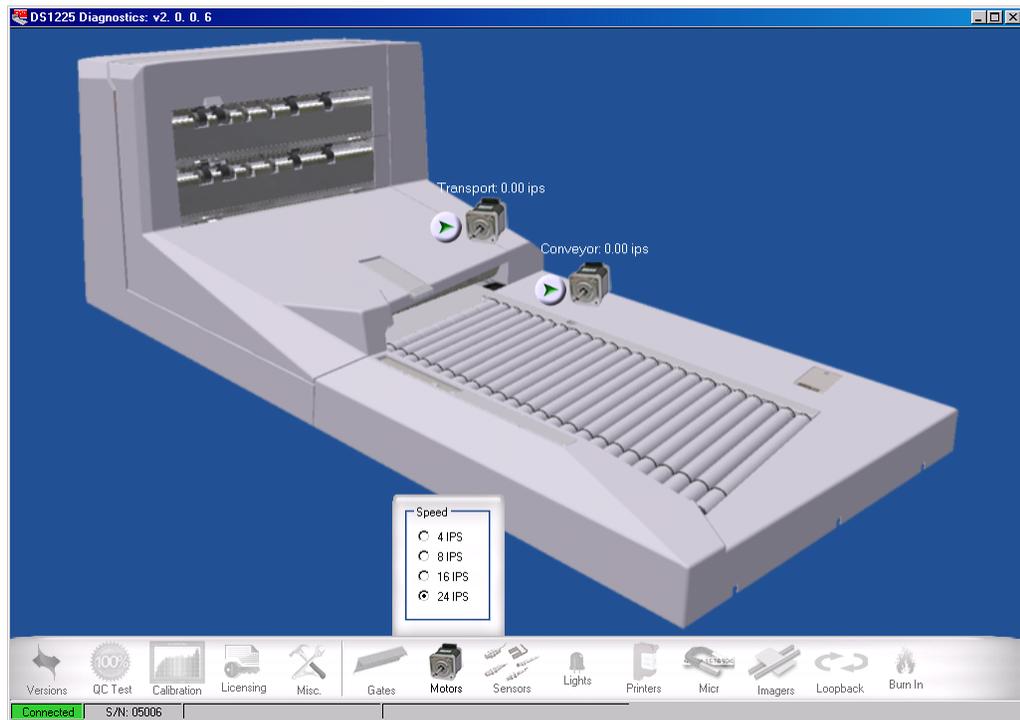


FIGURE 57: Full Diagnostics - Motors

When you click the **Motors** icon, this screen appears. There are two motors: one used for the conveyor and feeder, the other used for the transport and stacker. There is one Stepper board which controls both motors.

To confirm that the motors are working properly

- 1 Click on each green arrow to start each motor individually. This procedure will test the motors at varying speeds: 4, 8, 16 and 24ips.
- 2 Clicking the red square will disengage the motor.

Sensors

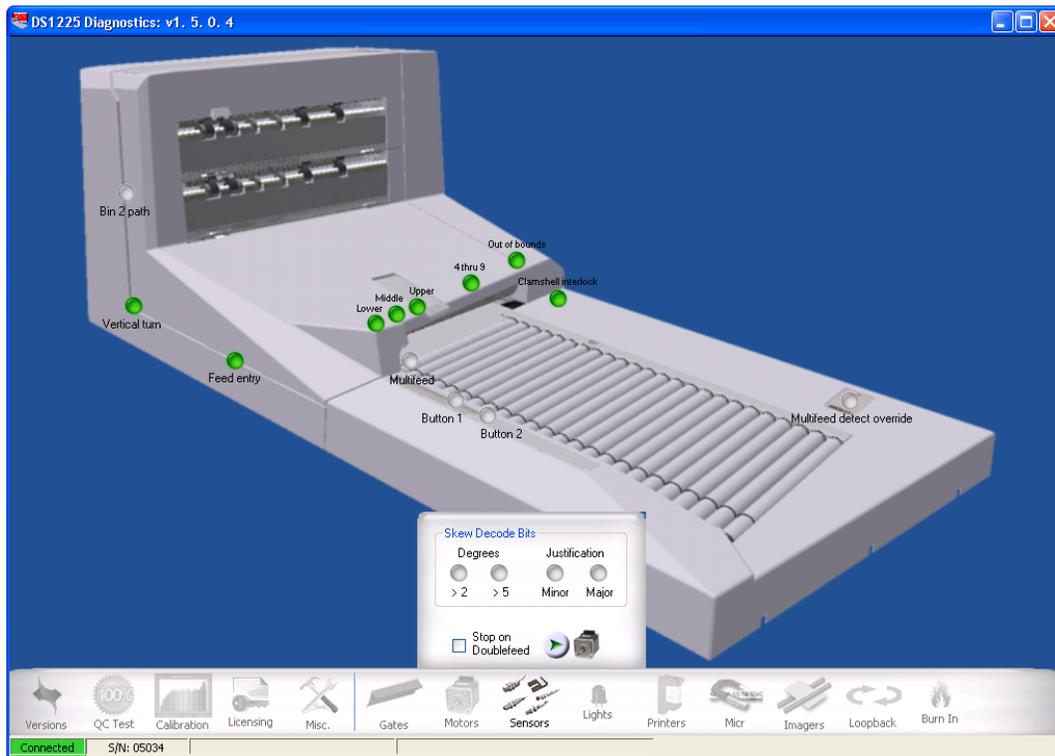


FIGURE 58: Full Diagnostics - Sensors

When you click the **Sensors** icon, this screen appears. There are several sensors types which are located throughout the DS1225. Sensors include: Clamshell interlock, Multifeed detect override (OpAssist), Lower skew, Even skew, Odd skew, Multifeed, Feed Entry, Vertical turn, and stacker (Bin 2 path).

To confirm the Clamshell interlock sensor is working properly, open and close (and latch) the clamshell. The LED indicator will transition from clear (door open) to green (door closed). To confirm the OpAssist sensor is working properly, place a sheet of paper over the sensor. The LED indicator will transition from clear (uncovered) to green (covered).

All other sensors can be checked by enabling the motors (click on the green arrow next to the motor) and dropping an 8.5x11 sheet of paper on the conveyor in Landscape mode. This will ensure that all path sensors are covered and the LED indicators transitions from clear (uncovered) to green (covered).

Degrees - these indicators will transition from clear to green if a skew is detected

Justification - these indicators will transition from clear to green if a document needs minor or major justification.

Stop on Doublefeed - If this box is checked, an envelope or any other type of double feed will stop the motor.

Lights

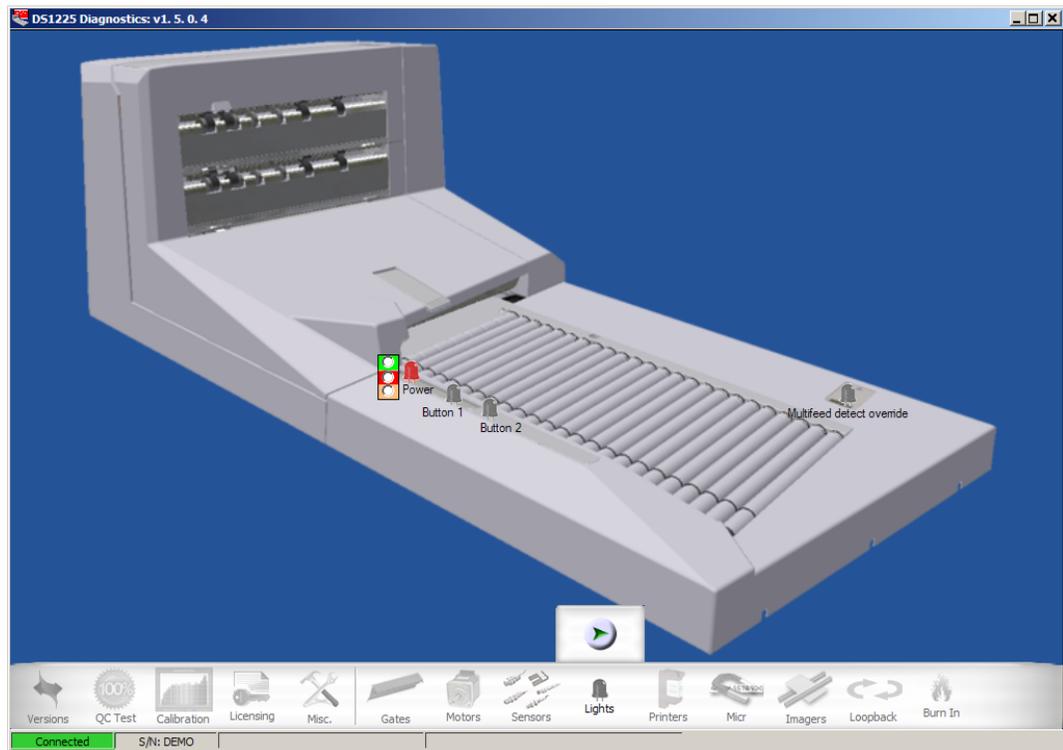


FIGURE 59: Full Diagnostics - Lights

Click on the **Lights** icon to display this screen.

The control panel has five LEDs: power on indicator LED, back printer fill/empty status, front printer fill/empty status, button 1, and button 2.

The Multifeed detect override LED signifies that a swipe over the sensor has been made. The sensor will turn amber after a swipe has been made, and will remain until a piece has passed the multifeed detect sensor.

To enable/disable the LEDs, click on the green arrow. All LEDs will light green. Click the red or yellow box to momentarily change the color of the LEDs.

Click the green arrow (red square) again to disable the LED color override and return the LEDs to their previous status.

Printers

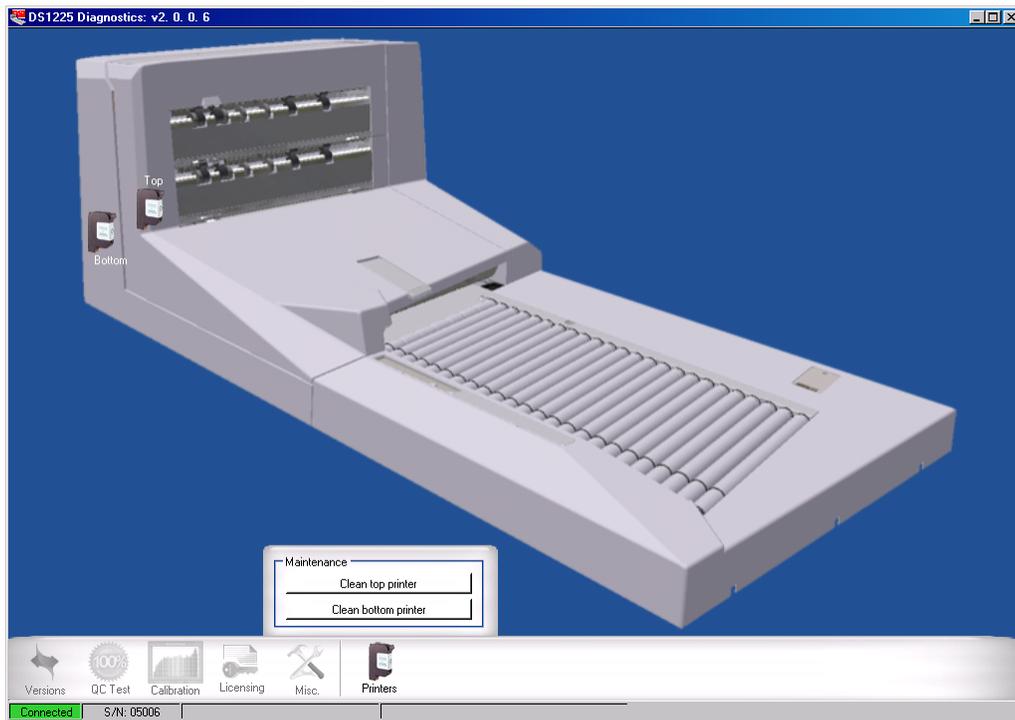


FIGURE 60: Full Diagnostics - Printers

Clicking on the **Printers** icon will display the above screen. The system has a bottom printer (standard) and a top printer (optional). The printer will allow 92 or 196 dpi print.

The steps for cleaning the printers are described in the Standard Diagnostics version on page 5-22.

To test if the printer is working properly

- 1 Set the offset for where the text will appear on the document, or use the default setting of 1 ½ inches from the edge closest to you.
- 2 Enter the text you would like to print on your documents.
- 3 Set the resolution of the printer.
- 4 Click on the green arrow to start the motor.
- 5 Drop a blank sheet of paper onto the conveyor.
- 6 Verify the text you entered printed on it.

MICR

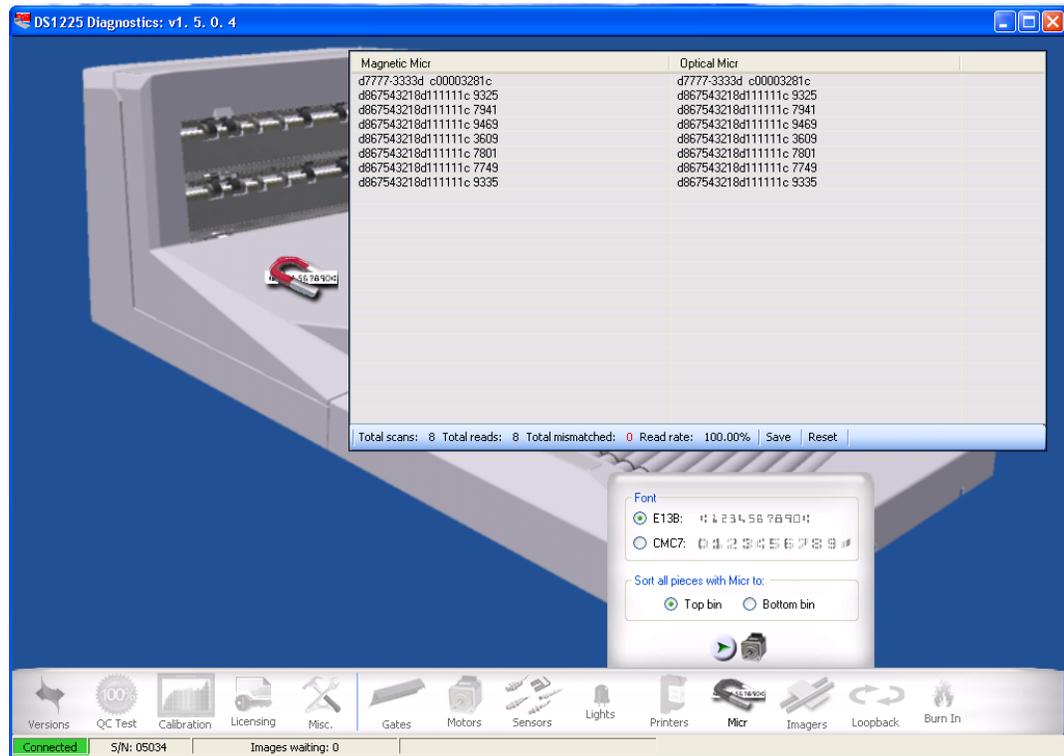


FIGURE 61: Full Diagnostics - MICR

The DS1225 has a 14mm MICR head that can detect the presence of magnetic ink on documents. The system can read E13b or CMC7 MICR fonts and sort to a selected bin. To properly read the MICR string, the document must have less than 2 percent skew as it passes the heads. If there is greater than 2 percent skew, the system will jam with a too skewed error. The system can also read the E13b special characters, but displays ASCII characters in place of them (“c”, “d”, etc.)

To test that the MICR is working properly

- 1 Click on the green arrow to start the motors.
- 2 Drop several checks.

An Optical and Magnetic MICR read will be displayed on the screen. The screen will list the number of MICR reads, highlighting the fields where there is a mismatch.

Imagers

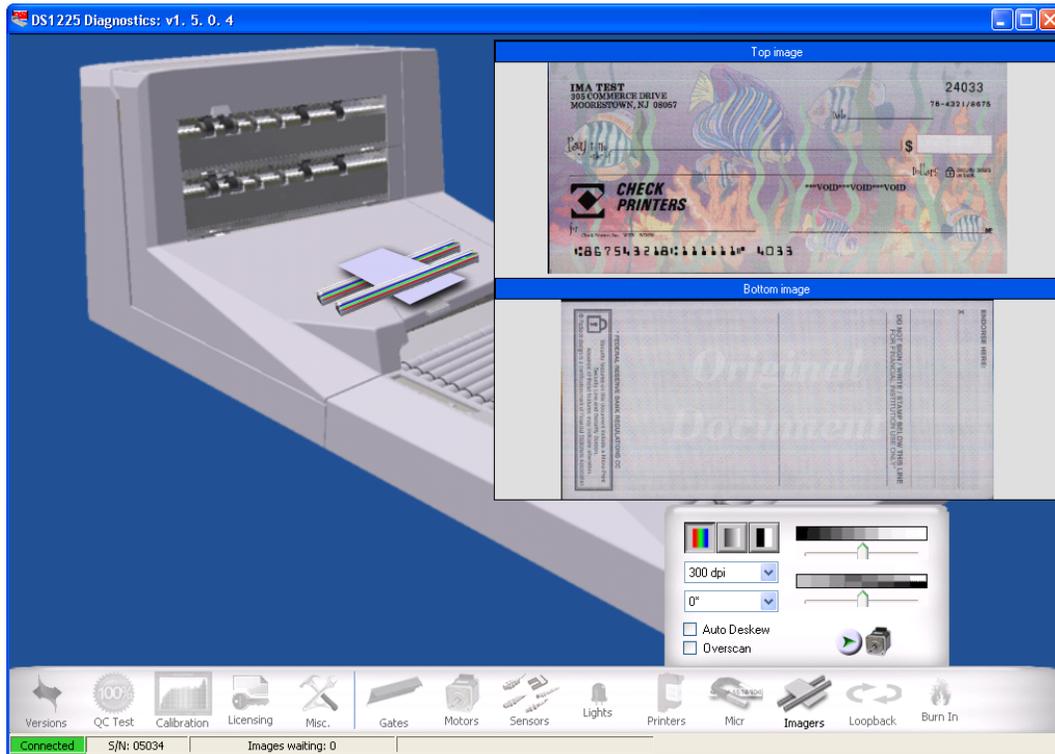


FIGURE 62: Full Diagnostics - Imagers

The DS1225 comes standard with a front (Simplex) imager. A second rear (Duplex) imager may be purchased. The imagers can capture an image size up to 12 inches x 25 inches. Image capture is performed in color, grayscale and bitonal. An image capture's brightness and contrast can be set prior to capturing an image.

To test the imagers are working properly

- 1 Select the **Imagers** icon.
- 2 Select the image capture mode, dpi, and the contrast/brightness levels.
- 3 Click the green arrow to start the motors.
- 4 Drop a document and it will populate in the top window.
 - NOTE:** If you're using Duplex mode, it will also populate the bottom window.
- 5 Click the red box to stop the motors.

Loopback

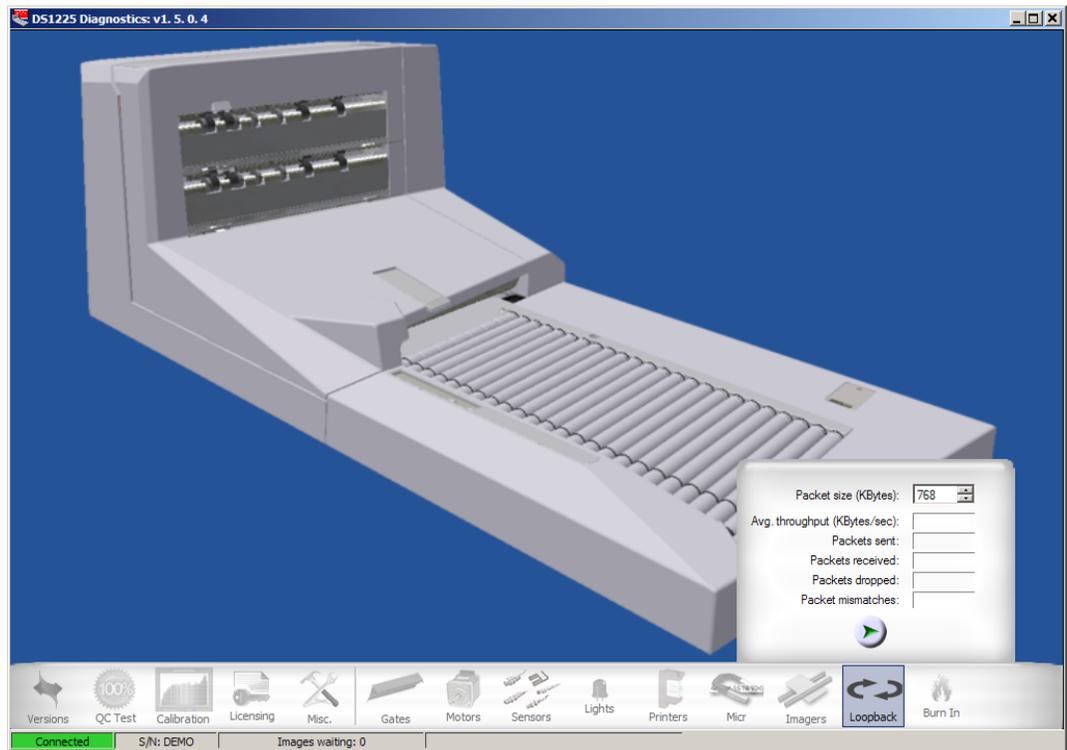


FIGURE 63: Full Diagnostics - Loopback

Loopback is used to set packet information. Packets are used to transfer data between your computer and the DS1225 via USB.

This feature is for OPEX engineering use only. Do not alter the settings unless instructed to do so by OPEX Technical Support.

Burn In

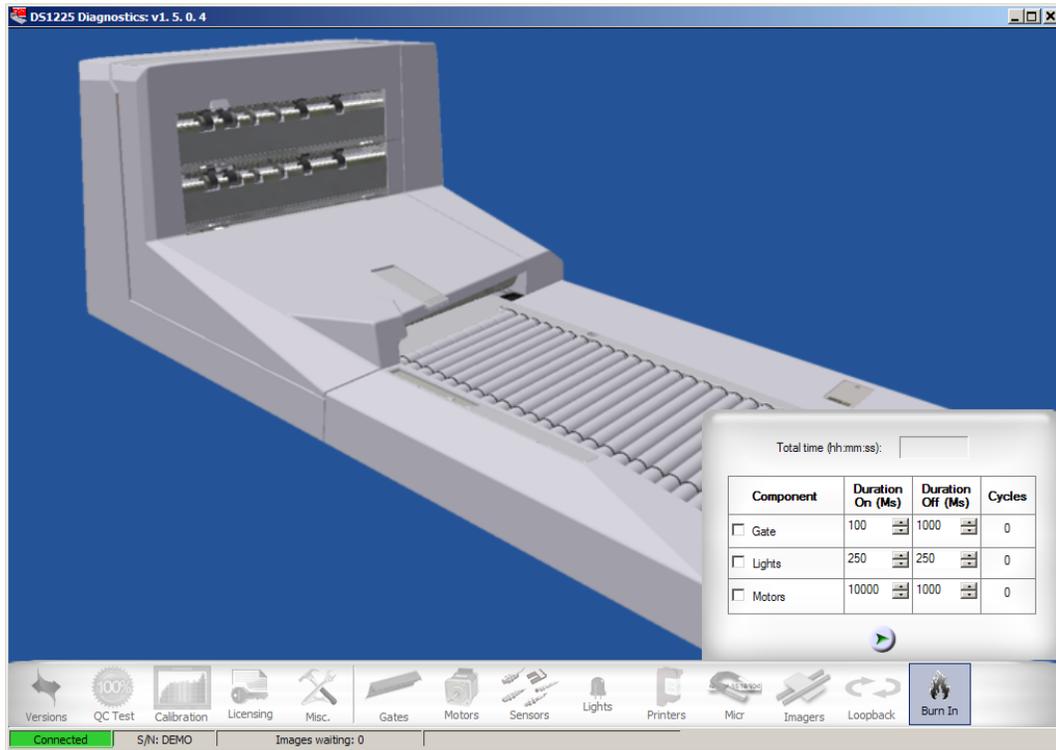


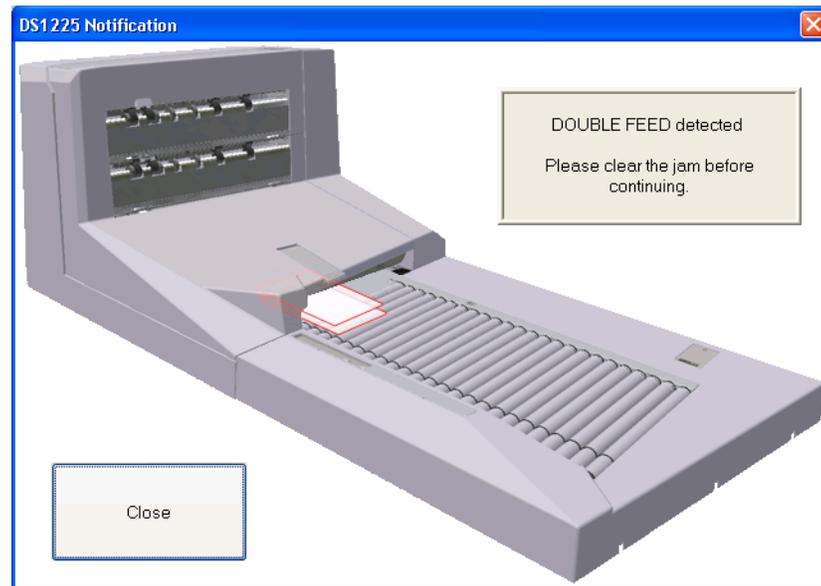
FIGURE 64: Full Diagnostics - Burn In

The burn in test will cycle through a series of enable/disable certain functions on the machine. For example: Gate will open and close every few seconds, motors will turn on and off every few seconds, LEDs will turn on and off, fans will turn on and off, etc. This will continue to occur until there is a forced stop.

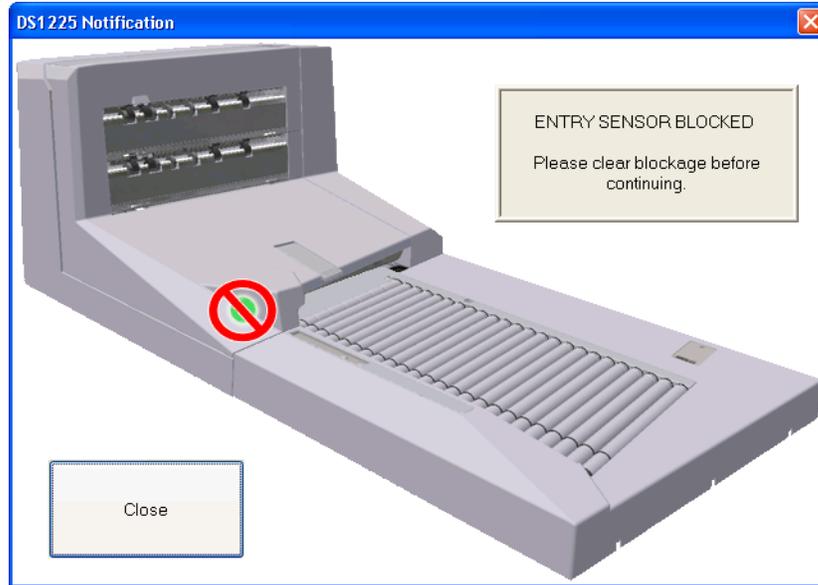
To enable the Burn In test, click on the green arrow. The check boxes to the left must be selected for each function to operate.

Scanner Jams

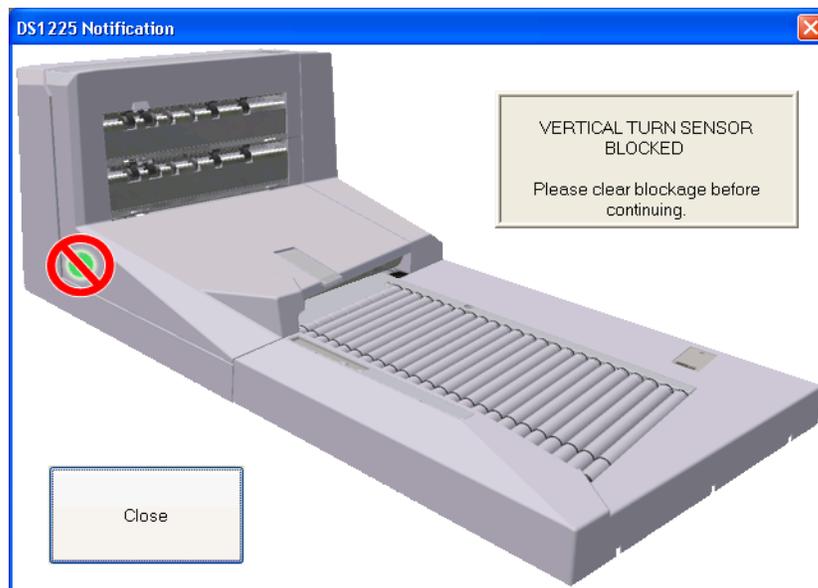
While running the DS1225, you may on occasional get a scanner jam message appearing on the monitor. The following lists the scanner jam messages, describes what possibly caused the jam, and offers a solution in fixing the error.



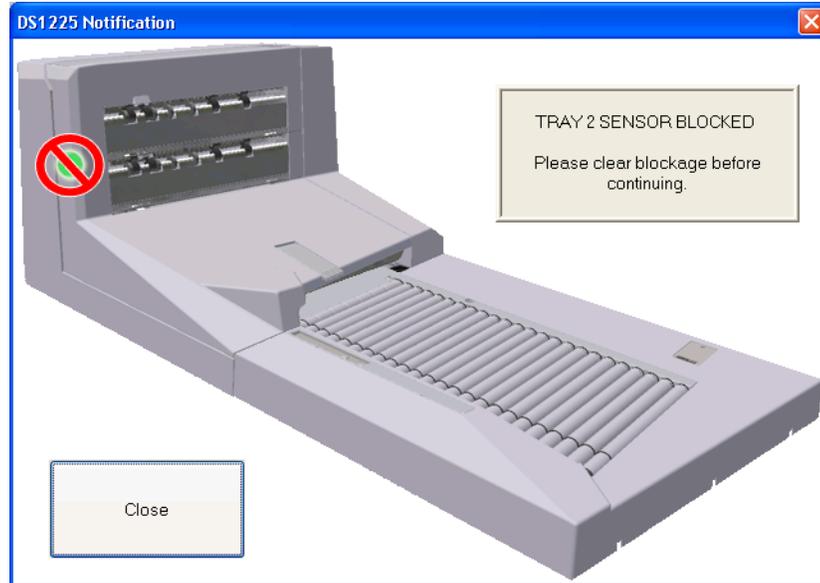
- **DOUBLE_FEED_DETECTED:** The system has detected more than one item. Open the transport door to clear the jam.
- **SKEW_DETECTED:** The system has detected that the piece dropped is skewed. Open the transport door to clear the jam.
- **SYSTEM_ENTRY_SENSOR_MISSING_JAM:** The system has detected that the piece did not block (pass by) the sensor at the expected time. Open the transport door to clear the jam.
- **VERTICAL_TURN_SENSOR_MISSING_JAM:** The system has detected that the piece did not block (pass by) the sensor at the expected time. Open the transport door to clear the jam.
- **BIN_2_PATH_SENSOR_MISSING_JAM:** The system has detected that the piece did not block (pass by) the sensor at the expected time. Open the transport door to clear the jam.
- **BIN_2_NOT_PATH_MISSING_JAM:** The system has detected that the piece did not block (pass by) the sensor at the expected time. Open the transport door to clear the jam.



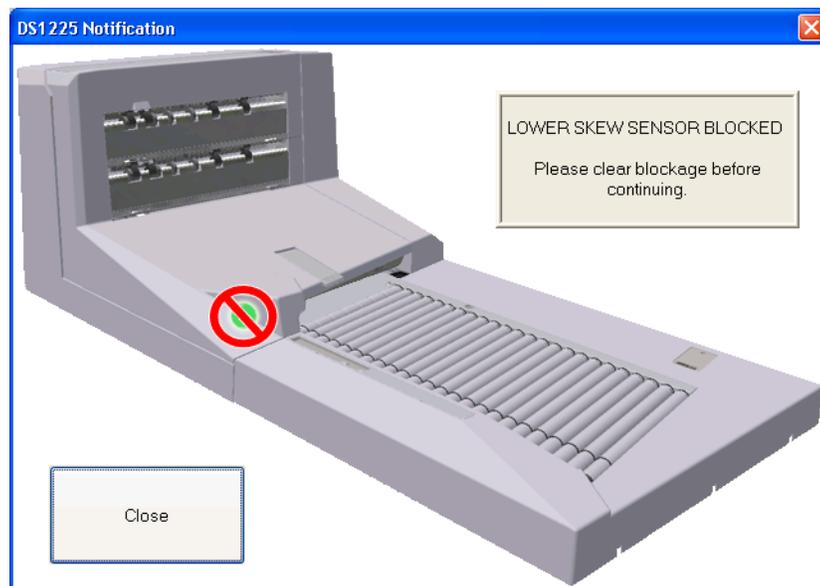
- **SYSTEM_ENTRY_SENSOR_BLOCKED_JAM:** The system has detected a covered system entry sensor. Open the transport door to clear the jam.



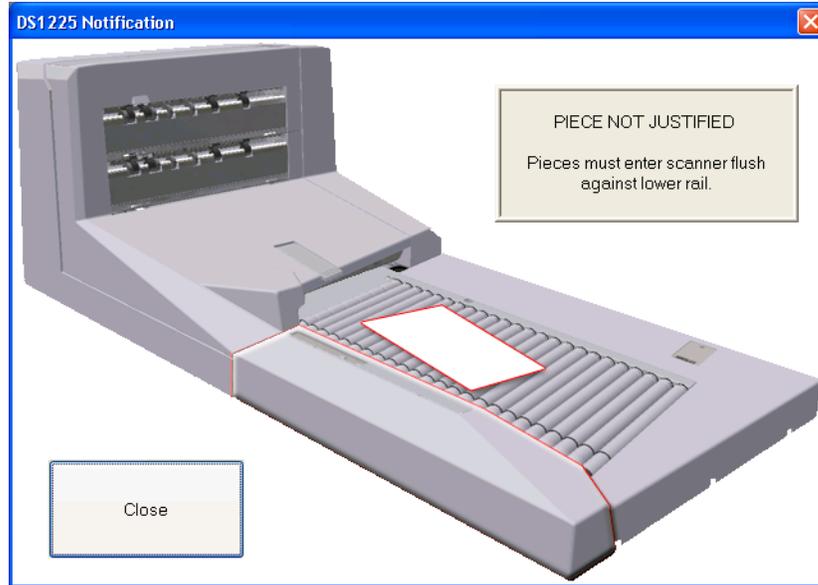
- **VERTICAL_TURN_SENSOR_BLOCKED_JAM:** The system has detected a covered vertical turn sensor. Vertical turn sensor is located prior to the sort bins. Open the transport door to clear the jam.



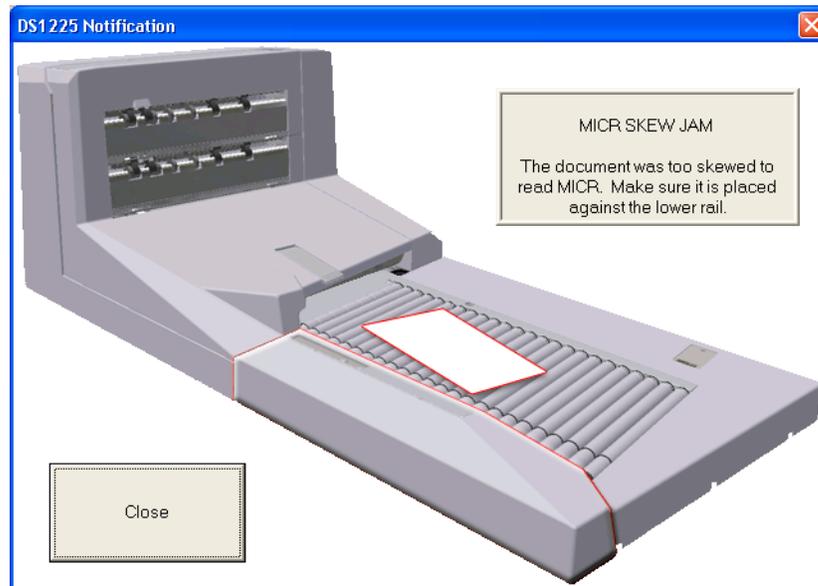
- **BIN_2_PATH_SENSOR_BLOCKED_JAM:** The system had detected a blocked sensor for the top sort tray. Open the transport door to clear the jam.



- **LOWER_SKEW_SENSOR_BLOCKED_JAM:** The system has detected that the piece dropped is skewed greater than two degrees. Open the transport door to clear the jam.



- **PIECE_NOT_JUSTIFIED:** The system has detected that an item did not fully justify to the rail before entering the scanner. Rerun the item making sure it justifies properly.
- **PIECE_GAP_TOO_SMALL:** The system cannot process documents accurately if they are scanned too close together. Open the transport door to clear the jam, and wait as moment longer between dropping documents.
- **INTERLOCK_OPEN:** The system has detected that the clamshell is not properly closed and latched. Open the clamshell to reset the sensor, and close the clamshell properly.



- **MICR_SKEW_JAM:** The system has detected that the item was too skewed to read the MICR line. Open the transport door to clear the jam, and place it against the lower rail before rerunning the item.

Troubleshooting

The following are troubleshooting steps to basic problems that may occur.

No Power (Unit will not turn on)

The power switch is in the ON position but the system does NOT turn on.

Possible cause	Action
Wall outlet source power is too low	Verify that the wall outlet has power.
Light on power switch does not come on	Confirm plug is connected to the outlet. Possible defective switch. Contact OPEX Technical Support.
No DC power	Possible defective power supply. Contact OPEX Technical Support.

Control Panel (Does not turn on)

The control panel does not turn on (no LEDs lit).

Possible cause	Action
Cable connector to panel is unplugged	Verify the control panel power plug is connected to the panel.
No AC power	Verify the control panel power plug is connected to the panel.

Conveyor and Transport Motors (Does not turn on)

Conveyor and transport motor do not turn on.

Possible cause	Action
No power to 36V power supply	Contact OPEX Technical Support.
Clamshell not closed	Confirm that the clamshell is properly closed and latched.

DS1225 scans one piece and stops

Possible cause	Action
Continuous feed is not activated	Verify that continuous feed is activated in the TWAIN UI.
Application mode is incorrect	Check the box in the TWAIN UI software settings (see “Application mode” on page 2-23).

Scanner does not communicate with Software Application

Possible cause	Action
USB cable is unplugged	Verify the connection between the computer and DS1225.
Cable is defective	Replace defective cable
Controller is not syncing with TWAIN Manager	Restart DS1225
TWAIN Manager not found	Re-install standard capture from CD

Printer does not print

Printing is smudged.

Possible cause	Action
Cartridge is not seated properly in the carriage	The cartridge should snap into the carriage when seated properly
Cartridge is empty or defective	Replace printer cartridge.

Should you have any additional problems not covered or described here, contact OPEX Technical Support at 1-800-673-9288.

Appendix

Audit ID Reference



Overview..... A-1
Example 1..... A-2
Example 2..... A-3
Example 3..... A-4
Example 4..... A-5

Overview

The purpose of this appendix is to provide more detailed information about how audit IDs function. Here is a short summary of the discussion found in Chapter 2:

Audit IDs provide up to 3 tiers of counters that are incremented and reset by specified events. The counters can be printed on the documents as part of a formatted string as they are scanned, thereby providing detailed audit information of the scanning process. The three tiers are Chapter, Document and Page.

There is also an Index counter that is incremented for each piece scanned, and is not affected by any audit ID events. The Index counter is reset to its seed value only when the track is restarted. There is one Index counter for each printer (top and bottom) if more than one is installed.

Each tier has a priority, Chapter having the highest and Page the lowest. When a higher priority tier counter is incremented, the lower tier counters are reset. The printed audit IDs (as well as the tier counter values) are returned in the TWAIN extended image information.

The events that cause a counter to be incremented and reset are configurable. The events are:

- A patch code (1, 2, 3, 4, 6 or T) is detected on a piece.
- The Action (Scanner) button is pressed.
- The OpAssist sensor is swiped.
- Piece count: After a specified number of pieces a higher level field will be incremented and the lower level counter will be reset.
- Primary: The primary counter is incremented when none of the events has occurred.

Following are more examples of different audit IDs and how they increment.

Example 1

Single tier, duplex scanning scenario where you are scanning single, unrelated pieces.

Tier 1: Page (event: primary)

Audit ID: **Index: <Index counter> Page: <Page counter>**

The expected scan sequence and output is:

Drop piece 1	
Top audit ID:	Index: 0001 Page: 0001
Bottom audit ID:	Index: 0001 Page: 0002
Drop piece 2	
Top audit ID:	Index: 0002 Page: 0003
Bottom audit ID:	Index: 0002 Page: 0004
Drop piece 3	
Top audit ID:	Index: 0003 Page: 0005
Bottom audit ID:	Index: 0003 Page: 0006
Drop piece 4	
Top audit ID:	Index: 0004 Page: 0007
Bottom audit ID:	Index: 0004 Page: 0008

Example 2

A two-tier, duplex scenario where you have one or more pieces.

Tier 2: Document (event: patch code 1)

Audit ID: **Document:** <Document counter> **Page:** <Page counter>

Tier 1: Page (event: primary)

Audit ID: **Document:** <Document counter> **Page:** <Page counter>

The expected scan sequence and output is:

Drop a patch code 1 sheet to start Tier 2 (Document) counting

Drop piece 1

Top audit ID: **Document: 0001 Page: 01**

Bottom audit ID: **Document: 0001 Page: 02**

Drop piece 2

Top audit ID: **Document: 0001 Page: 03**

Bottom audit ID: **Document: 0001 Page: 04**

Drop a patch code 1 sheet to increment Tier 2 (Document)

Drop piece 3

Top audit ID: **Document: 0002 Page: 01**

Bottom audit ID: **Document: 0002 Page: 02**

Drop piece 4

Top audit ID: **Document: 0002 Page: 03**

Bottom audit ID: **Document: 0002 Page: 04**

Drop piece 5

Top audit ID: **Document: 0002 Page: 05**

Bottom audit ID: **Document: 0002 Page: 06**

Drop a patch code 1 sheet to increment Tier 2 (Document)

Drop piece 6

Top audit ID: **Document: 0003 Page: 01**

Bottom audit ID: **Document: 0003 Page: 02**

Drop piece 7

Top audit ID: **Document: 0003 Page: 03**

Bottom audit ID: **Document: 0003 Page: 04**

Example 3

A two-tier, duplex scenario where you have mostly single pieces. Occasionally a piece will have additional pieces associated with it.

Tier 2: Document (event: primary)

Audit ID: Document: <Document counter> Page: <Page counter>

Tier 1: Page (event: Action button)

Audit ID: Document: <Document counter> Page: <Page counter>

The expected scan sequence and output is:

Drop piece 1	
Top audit ID:	Document: 0001 Page: 01
Bottom audit ID:	Document: 0001 Page: 02
Drop piece 2	
Top audit ID:	Document: 0002 Page: 01
Bottom audit ID:	Document: 0002 Page: 02
Drop piece 3	
Top audit ID:	Document: 0003 Page: 01
Bottom audit ID:	Document: 0003 Page: 02
Drop piece 4 (this piece has 3 associated pieces)	
Top audit ID:	Document: 0004 Page: 01
Bottom audit ID:	Document: 0004 Page: 02
Press the Action button to increment Tier 1 (Page). Tier 1 will increment until the Action button is pressed again.	
Drop associated piece 1	
Top audit ID:	Document: 0004 Page: 03
Bottom audit ID:	Document: 0004 Page: 04
Drop associated piece 2	
Top audit ID:	Document: 0004 Page: 05
Bottom audit ID:	Document: 0004 Page: 06
Drop associated piece 3	
Top audit ID:	Document: 0004 Page: 07
Bottom audit ID:	Document: 0004 Page: 08
Press the Action button to make Tier 2 the primary again.	
Drop piece 5 (not associated with piece 4)	
Top audit ID:	Document: 0005 Page: 01
Bottom audit ID:	Document: 0005 Page: 02

Example 4

A two-tier, duplex scenario where you have a fixed number of pieces in a logical grouping, in this case three different forms.

Tier 2: Document (event: piece count - every 6 pages)
Audit ID: **Document:** <Document counter> **Page:** <Page counter>

Tier 1: Page (event: primary)
Audit ID: **Document:** <Document counter> **Page:** <Page counter>

The expected scan sequence and output is:

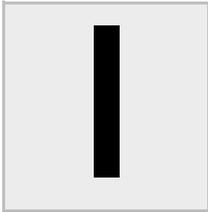
Drop form A	
Top audit ID:	Document: 0001 Page: 1
Bottom audit ID:	Document: 0001 Page: 2
Drop form B	
Top audit ID:	Document: 0001 Page: 3
Bottom audit ID:	Document: 0001 Page: 4
Drop form C	
Top audit ID:	Document: 0001 Page: 5
Bottom audit ID:	Document: 0001 Page: 6
Drop the next form A. Tier 2 (Document) will increment, as 6 pages have been scanned. Tier 1 (Page) will reset.	
Top audit ID:	Document: 0002 Page: 1
Bottom audit ID:	Document: 0002 Page: 2
Drop form B	
Top audit ID:	Document: 0002 Page: 3
Bottom audit ID:	Document: 0002 Page: 4
Drop form C	
Top audit ID:	Document: 0002 Page: 5
Bottom audit ID:	Document: 0002 Page: 6
Drop the next form A. Tier 2 increments.	
Top audit ID:	Document: 0003 Page: 1
Bottom audit ID:	Document: 0003 Page: 2
Drop form B	
Top audit ID:	Document: 0003 Page: 3
Bottom audit ID:	Document: 0003 Page: 4
Drop form C	
Top audit ID:	Document: 0003 Page: 5
Bottom audit ID:	Document: 0003 Page: 6

Glossary



- Audit ID** User-definable information printed on documents.
- Barcode** A series of bars and spaces arranged in a predetermined pattern to represent elements of data.
- Bitonal** Image format where every pixel is either black or white.
- Category** Grouping of similar settings.
- Clamshell** The section of the DS1225 that can be opened. Opening the clamshell allows you to clean the printers, calibrate the scanners, and clear any paper jams.
- Counter** Incremental values that make up an audit ID. These values increment based on specific events, such as when a piece is scanned or an “action” is taken.
- Double-feed** Two documents entering the scanner at the same time. This will result in a jam.
- Dropout** Removing a selected color from a document image. The DS1225 can remove red, green, or blue from document images.
- Event** An occurrence (such as a press of the Action button, a swipe of the OpAssist sensor, or scanning of a patch code) that increments or resets an audit ID.
- Grayscale** Image format where all pixels are processed as a shade (level) of gray. Gray levels range from 0 (black) to 255 (white).
- MICR** Magnetic Ink Character Recognition. Used by the scanner to read the magnetic ink letters, numbers and symbols found on documents such as checks and batch tickets.
- OCR** Optical Character Recognition. Used by the scanner to identify letters, numbers, and symbols on documents.
- Operator** The person running the machine. Typically, this person is referred to as the “user.”
- Piece** Any single sheet of paper processed by the DS1225.
- Skew** A term used to identify when a document is misaligned when scanned. Typically, a skewed document prevents the scanned image from being read properly.
- Tier** Prioritized counters that make up an audit ID. The TWAIN UI uses the three tiers, Chapter, Document and Page to establish audit IDs.
- TWAIN** Technology Without An Interesting Name - The interface standard for computers that allows imaging hardware devices (scanners and digital cameras) to communicate with image processing software.
- USB** (Universal Serial Bus) An external bus standard that supports data transfer rates of 12 Mbps. A USB port is used to connect the DS1225 to your computer.

Index



A

acquiring images 2-4
 Action button 1-12, 2-12–2-14, 2-26
 AntiJam roller 3-6
 audit ID 1-10, 2-13, A-1–A-5
 counters 2-13
 establishing 2-19
 events 2-14
 reference A-1–A-5
 settings 2-13–2-22
 tiers 2-13

B

bitonal 2-10, 2-11

C

calibration
 results 5-19
 wizard 5-18
 Capture application 2-1, 2-3–2-7
 acquiring images 2-4
 file naming 2-5
 format filenames 2-6
 language 2-7
 progress bar 2-7
 CertainScan 1-1, 2-2
 Chapter counter 2-13
 Chapter tier 2-16
 clamshell 3-6–3-7
 cleaning the scanner 4-9
 clearing jams 3-6
 color dropout 2-11
 components 1-9
 connections 1-13
 consumables 4-1
 contact image sensor (CIS) 1-10
 cleaning 4-9
 continuous feed mode 2-27
 control panel 1-11
 conveyor 1-10, 1-12, 3-2
 feeder O-ring replacement 4-7–4-8
 counters 2-13
 incrementing 2-14
 piece count 2-18
 seeding 2-15
 settings 2-18
 setup 2-16

D

diagnostics 2-2
 calibration 5-18
 enabling 5-28
 full 5-28–5-42
 gates 5-34
 imagers 5-40
 lights 5-37
 loopback 5-41

MICR 5-39
 motors 5-35
 printers 5-38
 sensors 5-36
 standard 5-1–5-27
 Document counter 2-13, 2-15
 Document tier 2-16
 double-feeds 1-10, 3-3
 drop zone 2-25
 Dynamic Scan 2-26–2-29
 dynamic text 2-19

E

envelopes 1-10, 3-3
 ergonomics 1-3
 ethernet 1-13

F

file naming 2-5
 format filenames 2-6

G

grayscale 2-10, 2-11
 groups 2-26

I

incrementing counters 2-14
 Index counter 2-13
 ink cartridge 4-2
 installation 1-4–1-8
 software 1-8
 interlock system 1-3

J

jams 3-2, 3-6
 justifying documents 3-2

L

landscape documents 3-1
 language 2-7
 LEDs 5-37
 licensing 5-22

M

Machine Serial Number (MSN) 5-22
 MICR 2-10, 2-12, 3-3
 enabling 2-27
 wiper replacement 4-5–4-6
 MICR reader 1-10
 MICR wiper assembly 4-5
 multifeed detection 1-10, 3-3

O

OpAssist 1-10, 2-12–2-15, 2-25, 2-26, 3-3
 Option Activation Key (OAK) 5-22
 output trays 1-10

P

packet information 5-41
 Page counter 2-13, 2-15
 Page tier 2-16
 patch code 2-13–2-14, 2-26
 PC requirements 1-14
 piece count 2-18
 portrait documents 3-1
 power cord 1-13
 power indicator (LED) 1-12, 3-1
 power switch 1-13
 primary counter 2-14
 print string 2-16
 printer 1-10, 1-12
 adjusting position 4-4
 cartridge 4-2
 cartridge replacement 4-2–4-4
 cleaning 4-9
 progress bar 2-7

R

requirements (PC) 1-14

S

safety 1-3
 saving settings 2-30
 scanner settings 2-9–2-25
 scanning
 envelopes 1-10, 3-3
 justifying documents 3-2
 tutorial 3-1
 seeding
 incrementing 2-15
 skew 3-2
 software
 CertainScan 2-2
 full diagnostics 5-28–5-42
 installation 1-8
 options 5-22–5-25
 overview 2-1–2-2
 scanner settings 2-9–2-25
 standard diagnostics 5-1–5-27
 TWAIN UI 2-1, 2-8–2-30
 versions 5-2
 Software Options Lock System (SOLS) 5-22
 sort settings 2-12
 sort trays 1-10
 installing 1-6
 preparing 3-5
 specifications 1-2
 static text 2-13, 2-19
 Stop button 1-12

Index

T

- tiers **2-13**
 - event based **2-17**
 - setup **2-16**
- TWAIN
 - driver CD **3-1**
- TWAIN UI **2-1, 2-8–2-30**
 - audit ID settings **2-13–2-22**
 - hardware settings **2-24**
 - incrementing counters **2-14**
- navigating **2-8**
- saving settings **2-30**
- scanner settings **2-9–2-25**
- scanning settings **2-10–2-11**
- seeding counters **2-15**
- software settings **2-23**
- sorting settings **2-12**

U

- Unique Machine Identifier (UMI) **5-22**
- USB **1-13**
 - cable **1-8, 3-1**

W

- wiper (MICR) **4-5**
- workstation **1-14**